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ABSTRACT

Project READ had a two-fold purpose: to improve the reading levels of diagnosed learning disabled adults, and to investigate the following research questions: (1) which of three teaching approaches selected for this study is most effective for reading disabled adults? (2) what is effective assessment? and (3) how may the impact of reading difficulty and remediation on individuals' self-esteem and emotional well-being be measured? Twenty adults, ranging from young to retired, participated for the entire 2-year program, meeting 1 hour per day, 4 days per week. The three instructional approaches used were: (1) reading from scratch--a structured, sequential, synthetic phonics curriculum; (2) reading from scratch with equipment, such as a tape recorder; and (3) a traditional adult reading approach, focusing on language experience. Students were carefully assessed and psychologically profiled before the project and posttested after the project. The study found that the direct teaching of phonics and language structure in a controlled, sequential format is more effective for learning disabled readers than is teaching in which the inclusion of phonics instruction as well as the method of its presentation are at the discretion of the teacher. Assessment methods using oral, nontimed approaches seemed best. This report includes detailed case studies on individuals and subgroups of persons participating in the program; a 27-item assessment bibliography; an 18-item curriculum bibliography; a list of 17 resource organizations; a sample intake interview; and 14 references. (KC)

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269 First Street
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Project READ was a study of 20 reading disabled adults conducted under the guidance of the Pittsfield Adult Learning Center, by the staff/teachers of The Learning Connection, a non-profit adult education resource center. The primary focus of the Learning Connection is adult learning disability.

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* Though this manuscript should be read as a whole, each *
section has been written to be complete in itself.

OPENING STATEMENT

April 3, 1988
Before I came here I felt as if I was not part of life. When you can´t read or write you learn fast.

....

June 30, 1989
I have never finished a book in my life. I have come close with a book called Murder on the Appalachian Trail.

....

July 2
I bought a new book about a woman who sailed by herself across the Atlantic. One hundred and ninety pages; I am on page one hundred. I think I can do it!

....

July 3
Here we are in a new month, time really does go by. Soon it will be time to turn another page in my life.

....

July 14
I finished my first book today. I am feeling good about that. I´ve known how to read for a long time but not how to be part of it.

....

August 10
I heard on the radio of a fire in Boston. They quote Commissioner Leo D. Stapleton saying it is a large fire. Normally this would not mean a thing to me, but the Commissioner is the author of the book I am reading. I love how reading makes you part of life. I felt as if I was right in Boston fighting the fire.

....

* Extractions from a student journal *

PART I INTRODUCTION

INTRODUCTION AND AN INVITATION

Project READ represents our attempts to answer some questions that had arisen as we helped adults learn to read. Initially, we wanted to find out if the success we had experienced teaching a small number of learning disabled adults would be the same if the procedure was altered. We then decided to see if comparable progress would be made by a small group taught with an entirely different kind of curriculum.

The type of study which this is...an hypothesis generating study...began with a set of questions and as the study progressed, as the information began to accumulate and our understanding grew, the questions changed. Some became clearer and more specific; others were dropped as better ones took their place.

An example of this process is our including case studies of individuals and sub-groups in addition to statistical data of reading gains. We came to realize that the small number of study participants meant that each individual's scores would affect the statistics heavily. At the same time, the benefit of the small population was that over a two or three year period, we would be able to know the students very well, and to analyze, in depth, both the characteristics of the population and each individual student's responses to instruction. Sub-groups emerged from this analysis. Close observations and analyses of each student's responses allowed us to isolate and define responses and to recognize common patterns.

There is a great need for research by practitioners, to provide information about LD adults and what works and doesn't work so well with them. We hope that this study will lead teachers to respond with their own questions and answers to the subjects we have considered here.

STATEMENT OF PURPOSE

The purpose of Project READ has been dual:

Teaching

To significantly improve the reading levels of diagnosed learning disabled adults.

Research

To investigate the following research questions.

1. Which of three teaching approaches selected for this study is most effective for reading disabled adults?

2. What is effective assessment?
   a. Evaluation of the reading disabled adult.
   b. What assessments demonstrate about reading performance.
   c. What academic behaviors may be identified by regular staff observation and documentation.

3. How may we measure what impact, if any, reading difficulty and subsequent remediation have had upon individuals' self esteem and emotional well being?

PART II BACKGROUND INFORMATION

THE RELATIONSHIP OF LITERACY, LEARNING DISABILITY AND DYSLEXIA

Literacy

Literacy today is not a fixed, static concept. It cannot be considered apart from particular societies or even particular individuals within the societies. Literacy in a developing country is far different from literacy in a technologically advanced one. Moreover, within a society the level of language skills needed by individuals in various subgroups is not uniform. And finally, what is considered today to be an adequate reading and writing level, may no longer be sufficient within a very short time, because of rapid technological change. The old definition of literacy as the ability to read and write at the equivalent of a fourth grade educational level is, plainly, no longer adequate. This was recognized recently in the following definition developed by the Adult Bureau of the Massachusetts Department of Education.

> To be functionally literate means to be able to read, write, comprehend, compute, think critically, problem solve, and communicate in English well enough to meet individual goals as family members, workers, and citizens.*1

This type of open definition is important because it implies that a society wanting a literate populace will provide the educational structure to support the efforts of individuals, until literacy is reached in the individual´s own judgement...whether that is at an 8th grade educational level, or 12th grade, or beyond...and whether it is reached at age 16, or 22, or in middle age.

Extent of Illiteracy

By any definition, the number of illiterate adults is staggering. By the narrowest definition...total inability to read or write in any language...the U.S. Census Bureau reported in 1982, that .9 million people admitted to being totally illiterate. Four million adults had completed fewer than 5 years of school, 11 million adults had completed fewer than 8 years of school. However, estimates have gone as high as 100.4 million Americans age 14 and over who would be considered less than functionally proficient, and the U.S. Department of Education estimates that 2.3 million persons join the numbers of the functionally illiterate, annually.*2 If Massachusetts´ expanded definition were applied, the numbers would climb astronomically.

Illiteracy and Learning Disabilities

In a society which values literacy and provides universal public education through high school, what can be the cause for the huge numbers of its citizens unable to read, write, and compute well enough so that they can function successfully in their world? What is certain is that there is no single cause. Illness, poor understanding of spoken English, lack of access to schooling, emotional disturbance or severe deprivation, family or societal disorganization, poverty...all have an impact on learning.

There is, however, a major additional factor which has only recently begun to receive the attention which it deserves. Finally, it is beginning to be recognized that hidden within the large number of illiterates exists a significant sub-population...individuals with learning disabilities: those individuals whose illiteracy is directly tied to a severe learning difficulty.

Worldwide, the percentage of children who are learning disabled is remarkably consistent: from 10% to 15% of the school population. Some of these children receive remedial education while in school, and an unknown number may acquire reading after a late neurological maturation. However, a large number of LD children in this country are not successfully remediated and reach adulthood, either unable to read or write, or performing these skills minimally, or with significant deficits. Even those who are helped somewhat in school may reach a reading/writing plateau at the end of their schooling, far below their ability level.

Often they are the junior high and high school drop outs. In *Adult Illiteracy in the United States*, Hunter and Harman found that school drop outs fell into four groups: those who eventually finished their education; those with greater educational deficiencies, but who were in a social group where literacy was the expected norm, and who went to great pains to hide their illiteracy; those who had had multiple deprivations, were failing in school, and preferred job training; finally, those who were severely deprived and had given up hope that anything they might do would improve their situation.*3 What Hunter and Harman did not address was the strong possibility that people who went to such effort to hide their illiteracy, may well have not learned to read because they were learning disabled. Or that others who were failing and were discouraged about academic learning, may have had learning disabilities as the underlying cause for their school failure.

What is more, there is an additional group of illiterate adults where learning disabilities may be found. This is the group of high school *graduates* who cannot read the diplomas they receive. The numbers cannot even be guessed at, but in Project READ's small population, almost half the students had graduated from high school.

Our contention that there are significant numbers of adult illiterates who are learning disabled is supported by estimates that 40% to 70% of the students in literacy programs have learning disabilities (*4) and estimates by various experts in the field that from 40% to 85% of adults who read at or below a 4th grade level are learning disabled. There are 182.6 million adults currently in the United States. At least 10% of them have some degree of learning disabilities...18.2 million. Assuming that one third of them have mild disabilities and were able to be remediated in school, that still leaves two thirds of them entering adulthood with disabilities ranging from moderate to severe...12.1 million...and probably with academic deficits, moderate to severe.

Learning Disabilities and Dyslexia

Learning disabilities is a group of disorders of presumed neurological origin affecting the processing of information...primarily written and spoken language. They may manifest themselves in difficulty with learning to read, write, spell, and do mathematics. They may include difficulties with perception, memory, attention, socialization, coordination, and spacial orientation. These information processing difficulties are not the result of mental retardation, economic, educational or social deprivation, or health or sensory impairments.

Specific reading disability, which we will refer to as dyslexia, is that aspect of learning disabilities that affects reading. The word dyslexia means lack of, or poor, verbal language. It is characterized by an abnormal difficulty in learning to read and spell, caused by a central nervous system dysfunction. We believe that reading/writing difficulty is present in a very high percentage of individuals who are learning disabled...and in this study we have used the terms "learning disabilities" and "dyslexia" interchangeably.

HIGHLIGHTS OF CURRENT RESEARCH IN SPECIFIC READING DISABILITIES

Theories seeking to explain specific reading disability range from those concerned with physiological differences: neurological abnormalities, genetic differences, sensitivity to light, abnormal eye movements...to those concerned with psychological processes: problems with auditory and visual perception and the integration of perceptions, problems of sequencing, and difficulties in the processing of language. Research is being done in laboratories and clinics, hospitals and classrooms and in several fields of learning...from neurology with its investigations of brain function, to studies from the field of education of beginning reading, reading problems, and remediation. The research from these and from the other fields is far too voluminous to do more than just touch on..first, studies which provide a background understanding for this research project, and...second, some current research which seems promising in understanding the causes, in the early identification, and in the remediation of specific reading disability.

The Normal Brain, Laterality, and Reading

It is now generally accepted that the two hemispheres of the normal brain are specialized as to function, and that they process information in different ways. The left brain processes in a linear-sequential, analytical, logical way while the right hemisphere processes in a holistic, all-at-once, pictorial, spacial, synthesizing way.*5 Areas specialized for language reside mostly in the left hemisphere with the right hemisphere essentially non-verbal. Reading is a function of both hemispheres working together, each making a different contribution. It is hypothesizd that in reading, visual stimuli travel from the visual cortices of both hemispheres to the left hemisphere (angular gyrus) and then, after processing for word selection and comprehension, to the anterior left hemisphere language area where the interpretation of written words occurs and, if required, the initiating of verbal motor response. The connecting of sound with written symbol seems to involve posterior areas of both hemispheres and especially the language areas of the left hemisphere. Words that can produce pictorial images stimulate right hemisphere areas, which then produce the visual images.*6

The two hemispheres are connected by a bundle of nerve fibers called the corpus collosum. The completion of the myelination of these fibers...that is, their insulation with a fatty substance which increases speed and intensity of neural impulses...normally by age 9 or 10, increases the efficiency with which the two hemispheres can communicate and process information together.*7

In reading, the right hemisphere may decode visual information and create corresponding images, appreciate emotional content, keep track of the plot, and connect it with the reader's life experience. Meanwhile, the left hemisphere is decoding the written words into sound representations which have meaning and are syntactically correct.*8

Neurological anomalies, delay in maturation, or damage in any area of the brain needed for the processing of language...right or left hemisphere, or corpus collosum...may result in reading difficulties.

However, because the major responsibility for the orderly and accurate processing of written language, and especially the connecting of sound with symbol, seems to reside in the left hemisphere, neurological differences there appear to have a major effect on reading.

Right Hemisphere Reading

It has been found that the way reading disabled individuals read...including those in Project READ...resembles in many ways the reading of patients who have had massive left hemisphere brain damage, or who have had left and right hemispheres disconnected from each other by the surgical severing of the corpus collosum. It was found in studying these patients, that some reading can be done by the right hemisphere. Right hemisphere reading is ideographic...that is, the idea of the word is derived directly from print, without the intermediate step of decoding it phonetically. The right hemisphere is unable to evoke the sound image of a written word.*9,10 This pattern of ideographic right hemisphere reading by the split brain subjects is like that of the reading disabled individual who substitutes "dad" for "father" or "rug" for "carpet". These same patterns are exhibited by many of the adults who come seeking remedial help from adult literacy programs.

Bakker et al, compared right hemisphere and left hemisphere dominant students in their proficiency in learning to read. They concluded that while proficiency in early reading might go with either left or right hemisphere dominance, proficient reading at an advanced stage of the learning-to-read process is linked to left hemisphere dominance only.*11

Left Hemisphere Abnormalities in Individuals With Specific Reading Disabilities

In at least some individuals, it appears that right hemisphere reading may be the result of abnormalities in the left hemisphere. In post mortum studies of the brains of a small number of individuals with known reading disability, Galaburda and Kemper found that there were many structural abnormalities; and that the left hemisphere was the one primarily affected.*12,13 These brains included those of adults.

Studies of the electrical activity within the brains of normal and reading disabled individuals, using a process called Brain Electrical Activity Mapping (BEAM) have demonstrated that 80%-90% of specific reading disabled individuals show abnormal electrical activity patterns.*14 Other studies have found that left hemisphere electrical activity of reading disabled individuals is different from that found in normal readers.*15,16

Forced Lateralization

In the mid 1970's, van den Honert hypothesized that if it was the right hemisphere's attempt to control the reading process which was producing the typical right hemisphere kind of errors, and if the left hemisphere could be encouraged to take over the reading function, while the right hemisphere was constrained from interfering, then remediation of reading, disabled individuals might be hastened. van den Honert devised a procedure to test her hypothesis. First she tested the LD students with a tachistoscope, to ascertain which hemisphere was dominant for language...

usually it is the left hemisphere, but not always. Then, using a tape recorder, microphone, and ear phones with dual audio input, the teacher's or student's own voice was fed to the right ear, so that the left hemisphere, which gives preference to auditory impulses coming from the right ear, would get the verbal input. Meanwhile, music, the processing of which is a right hemisphere function, was fed to the left ear/right hemisphere to distract it. The left eye was covered so that visual impulses would be received only by the right eye and sent predominantly to the left hemisphere. (When...rarely...the right hemisphere was found to be dominant for language, the music, voice, and eye covering were switched to the opposite ears and eye.) She found that the junior high age reading disabled students with whom this procedure was used...together with synthetic phonics instruction...had a much faster rate of reading gain than had previous students, receiving the same type of instruction.*17 van den Honert also worked successfully with a number of adults, ages 20 - mid 40s.

In the late 1970's, Bakker et al studied the effects on reading gains by a group of reading disabled boys following stimulation of a specified hemisphere, right or left, both auditorily and visually. They tentatively concluded from their results that the ability to read could be improved through stimulation of the appropriate hemisphere.*18

Research in the Field of Education

The Learning Processes and the Remediation of the Reading Disabled Individual

In studying the nature and origin of word identification problems in poor readers, Vellutino has examined and reported on the theories which seek to explain reading disability. These include theories that reading disability is caused by deficits in one or more of the following: visual processing, visual memory, visual-spacial orientation, visual sequencing, serial memory, directionality, ability to integrate information coming from different sensory modalities, associative learning (learning and remembering patterns and rules), interhemispheric transmission, and verbal memory.

Vellutino et al have largely found that the functioning of dyslexic and normal readers in the above processes were comparable...except when trying to perform those processes in relation to letters and *words*.*19 For example, in one study it was found that the problem was not that dyslexics perceived the letter "d" in reverse, but rather that they misnamed it a "b" because its name was not firmly linked with the correct letter. In another study, testing memory, it was only in memory for words, that poor readers did not do as well as normal readers.

From his research in studying verbal memory difficulties in reading disabled individuals, Vellutino hypothesizes that (1) the ability to represent and access the sound of the word in order to remember it...phonological encoding...and (2) the ability to break words into their componant sounds...phonemic segmentation...are crucial in the process of transferring verbal material into long-term memory. When the two processes are deficient, then the words are incompletely coded and may either not make it into long-term memory or may have been coded so inadequately that they are not recognized when recall is required. And this is a major factor in reading problems.*20,21

He reports that children with reading problems he has tested over the past 20 years have consistently had serious difficulty in sounding out nonsense syllables or unfamiliar words, indicating a lack of phonics.

Remediation

Chall states that researchers have found that direct synthetic phonics instruction produced results that were superior to analytic phonics for the learning disabled student.*22 The value of the direct teaching of phonics is echoed by reading clinics and private schools for the reading disabled.

New Technology

Research is currently being done using new technology to attempt to find differences in the brains of reading disabled children and adults. Studies using a process called Brain Electrical Activity Mapping...BEAM... have found abnormal electrical activity in the brains of reading disabled subjects. Computerized Axial Tomography...CAT, Positron Emission Tomography...PET, and Magnetic Resonance Imaging...MRI, all show differences between the brains of reading disabled individuals and normal readers. Some or all of these techniques may prove capable of providing positive identification at an early age of children with specific reading disability.*23,24

Genetics Research

Research confirms that there is a genetic componant in at least some forms of reading disability. It does run in families; it occurs more often in twins than in siblings, and at a much higher rate in identical twins than in fraternal twins. It occurs much more frequently in males than in females, at a ratio of between 4-1 to 10-1 depending on the study. The number of left handed individuals who have dyslexia has been found to be significant. And there also appears to be a link with diseases of the immune system. Recently, a gene in chromosome 15 has been tentatively identified in families with a history of learning disabilities as probably responsible for the disability. The isolation of this gene, if correct, could mean an enormous step forward in understanding the factors leading to reading disability.*25,26

Visual Perception

The American Opthalmalogical Association states in its 1984 bulletin Learning Disabilities that there is no scientific evidence that supports the hypothesis that poor vision, jerky eye movements, misaligned or crossed eyes or problems with eye-hand coordination cause reading disabilities.*27

Recently, however, Pavlides has developed a non-verbal test of eye movements that simulates the reading process, using lights, electric sensors and computers. Initial results indicate that reading disabled individuals eyes do move differently from those of normal readers...this being not an eye problem, but a result of the different way that the brain is perceiving. It may eventually be the means for early predication of reading difficulty. *28

In 1983, Irlen reported that a number of individuals with reading disability suffer from a distinct type of visual dysfunction which she labeled "scotopic sensitivity", and which is not found in a normal optimetric examination. In scotopic sensitivity, the retinal receptors of the eye appear to be overstimulated by certain wave lengths of light, producing visual distortions. These distortions are particularly strong with the high contrast, black and white of print and result in the symptoms of blurring and other distortions of letters and words, movement of words, and a narrow visual field. Secondary symptoms of headaches, eye strain, fatigue, and difficulty with concentration and comprehension are commonly associated with it. Irlen uses colored plastic overlays or lenses which screen out the particular wave length(s) of light to which the individual is sensitive. Preliminary evaluation, testing the efficacy of this procedure, supports its value to a number of reading disabled individuals.*29,30 In fact, some learning disabled readers and organizations that work with the reading disabled have been aware for years that colored transparencies ease visual distortion and discomfort associated with reading for some people. About a third of Project READ students prefer colored transparencies to the white page.

Neurolinguistic and Biological Mechanisms in Dyslexia and Learning Disabilities

This is the title of a large research project centered at Yale University and the Haskins Reading Laboratories. Its goal is a classification system of subtypes of reading disability within the larger population of LD individuals based on both cognitive and biological characteristics. The project is composed of five investigations and will be employing state of the art neuroimaging, neurophysiologic and family genetics studies, and a large longitudinal study of LD children.*31

Project READ's adult students have shown every kind of reading behavior described in the background research; they demonstrate clear familial patterns of the disability and the disability's link with allergies and other immune system problems; some have noticeably different eye movements. Some of the adults we have seen seem to be sensitive to light and find it more comfortable to read with colored plastic overlays. And virtually every adult we have tested who has a reading disability has had little or no phonics before they entered our reading program.

PART III STUDY DESIGN

FORMAT

Curricula and Teaching Approach - Three instructional approaches were used:

a. Reading From Scratch (RFS) - A structured, sequential, synthetic phonics curricula, developed for the reading disabled adolescent or adult. Dorothy van den Honert, Educators Publishing Service, Cambridge, MA.

b. Reading from Scratch With Equipment - Equipment designed by van den Honert was added to the basic curriculum to aid the focus and pace of learning. Equipment included tape recorder, microphone and earphones set-up that allowed the student to hear music in one ear while he heard his own voice, the teacher's voice or taped spelling exercises in the other ear. Students also covered one eye, so that the visual information, print, was visable only to the eye opposite the dominant language hemisphere for the student. (See Highlights of Current Research - Forced Lateralization for the rationale for equipment use.)

c. A Comparison Curriculum - This was a traditional adult reading approach, focusing on language experience. It included sight words, sentence and paragraph reading, spelling activities, writing activities, phonics reinforcement when necessary, and writing of language experience stories.

Staff

All six PR teachers worked part-time. Two teachers were assigned to the comparison curriculum. The lead teacher of this pair was certified in reading and in guidance counseling. Four teachers were assigned to the RFS curriculum. The lead teacher of this group was a certified English teacher and a guidance counselor. She had also done the preliminary work with reading disabled adults that led to this study. All teachers in PR had taken, or took during the study, seminars, workshops, and at least one graduate level course in reading/learning disability or linguistics. The director of the Pittsfield Adult Learning Center is a reading specialist, having completed a masters degree in this field.

Class Structure and Physical Environment

Students were taught one hour a day, four days a week. They were taught in pairs, with two teachers assigned to each pair. Teacher (A) taught the pair on Monday and Tuesday and teacher (B) on Wednesday and Thursday. RFS students were given no homework; the traditional students were given homework when the materials called for it. Classes were held in private locations: at the ABE Center, at two local churches, and at the Pittsfield Salvation Army.

Assessment

1. In-depth Intake and Completion Interviews

Intake: Educational, family, health, and employment history; Goal setting; Discussion of assessment and program committment

Completion: Discussion of test results; Discussion of progress, plans, future; Exit questionnaire

2. Intellectual Evaluation

Formal: Wechsler Adult Intelligence Scale (WAIS)
(obtained on 16 participants)

Informal: Interview: Discrepency between reading accuracy and oral comprehension

3. Reading Evaluations

Oral Reading Accuracy and Comprehension
(One measure was obtained by outside evaluators)

"Gray Oral Paragraphs", timed
"Gilmore Oral Paragraphs", untimed
(Because the Gilmore has a grade level ceiling of 9.8, a mathematician was employed to extend the scale to accomodate post test scores that exceeded the 9.8 grade level. To simply list such scores as 9.8 + would not allow their use in a comparison study. This statistical analysis and the supporting mathematical hypotheses have been submitted to the publishers of the test for their consideration. It is not likely that their response will be in hand by the time these results are printed. Nonetheless, all scores using the designed formula have proven reliable.)

Word Recognition

"Wide Range Achievement Test"

Word Attack - Phonics

"Woodcock Reading Battery", Word Attack

Silent Reading

"Stanford Diagnostic Reading Test", Comprehension
"Test of Adult Basic Education", TABE, comprehension (Most participants were given the Stanford. These were

administered at the beginning for a few, at the mid-point for most, and at completion for all.)

4. Spelling and Writing

- Dictated sentences designed to reveal error patterns associated with reading and writing disability

  "*Wide Range Achievement*", Spelling subtest

5. Auditory and Visual Memory

  Sub tests of the WAIS
  "*Detroit Tests of Learning Aptitude*", Memory for Sentences

6. Hemisphere Dominance for Language

  van den Honert laterality evaluation
  (This was done only with those adults that were to be placed in the equipment group.)

7. Psychological Evaluation

  Self esteem, depression/wellbeing, anxiety/security were evaluated through information from referral source, interview, self reporting, and selected psychological assessmnets.

  "*Depression Adjective Checklist*"
  "*Gordon Personal Profile Inventory*"
  "*IPAT Anxiety Test*"

Criteria For Acceptance Into The Program

1. Intelligence in normal range with no evidence of sensory impairment or of psychiatric difficulty.

2. Combined reading score equaling 5th grade or below calculated from five measures of reading

3. English as a first language

4. Strong motivation demonstrated by both voluntary application to program and by stated willingness to make a two year committment to READ

5. Determination by staff that learning disability was the major factor in the reading difficulty

Placement in Groups

Participants were placed in one of the three groups based on two necessary considerations:

1. Academic Balance - distribution of students among the groups on the basis of intelligence, assessment results, and age

2. Logistics - Assigning students to groups based on realistic considerations of student, teacher, and class availability

Support Activities

1. Access to individual counseling as needed, upon request of student or teacher

2. Monthly support group meeting available, year one

3. Scheduled meetings of counselor with each class, year two-three

4. Periodic social/informational or purely social gatherings, all years

Data Keeping

1. Daily teacher observations of academic behavior, progress, difficulty, and of student social/emotional behavior recorded in student academic files

2. Weekly staff meeting to discuss students, teacher concerns, adjust curricula, to consider and, to revise the research questions

3. Data from daily teacher observations extracted, organized and condensed.

READ Reporting Obligations

1. Five workshops were designed for year two, for the purpose of presenting preliminary results and insights gained from the work.

2. A research report was designed to include: statistical comparisons of the three teaching approaches based on post assessment results, case studies of individual students, case studies of sub-populations that surfaced during the project, information on current research and thinking about learning disabilty and reading, description of reading/learning performance of learning disabled adults based on analyses of selected assessments, results of psychological evaluation, impact of reading improvement on life outside the classroom, recommendations for effective assessment and instruction.

POPULATION DESCRIPTION

Every adult who came to Project READ came with the same hope-that of gaining control over his or her life. Though each person was unique, each life formed of individual experiences, all, because they could neither read nor write had reached the same place. All now faced similar dilemmas. For most it was when the dilemma overwhelmed strategies created to manage it that absence of control became intolerable. The adults themselves make this poignantly clear in the following statements. "I signed an agreement to pay a car salesman $4,000 too much; I had to tell my wife what kind of stupid I was." "What if I am asked to read a prayer at my Godchild´s baptism?" "I don´t know what I´ll do if my boss retires." It is this time of clarity, this unavoidable recognition of the cost of being a nonreader in a reading society, whether it comes in a flash before a car salesman, or grows more slowly as one sees someone upon whom he is dependent ageing, that forces most men and women to find within themselves the courage to seek help.

Adults came to Project READ at a point of hope, yet at the same time they carried within themselves vivid memories of school failure. This duality, hope and failure defined them as much as, perhaps more than, any data gathered through interviews or assessments.

The 25 students selected for the program ranged in age from 20 to 67. Eighty percent of the group were men, twenty percent women. Close to 40% had graduated from high school. Three were retired, one was a housewife, all the rest were employed. Of the workers, about two thirds held secure, relatively long term jobs. The rest, though they always had a job, were more likely to go from job to job. For the younger workers, building a secure work reputation proved, as a result of the reading problem, to be a more difficult task than it had been for the older workers. Three quarters of the students were married, all but three had children. Of 17 who had school age children, 14 had at least one child who showed the same initial difficulty learning to read or write. Of the 25, five dropped out before completing the program.

With the exception of two, all students reported leaving public school unable to read. Over half the group had sought private or public tutoring as adults.

Though all READ students had entry scores in the 5th grade range or below on a combined battery of five measures, different profiles showed up within the group. Two major patterns emerged. One pattern showed considerable scatter within the battery. The other pattern showed more similar scores on most tests. These initial profiles when added to other information gathered about students from interviews and subsequently from classroom performance, allowed READ staff to identify and describe two distinct groups within this study. The larger group, would be called functionally illiterate; they could not read, could not get useable meaning from print in any situation. A smaller number, fewer than a third of those accepted for PR, were classified as marginal readers. These people if given enough time for rereading, for a trial and error approach, and if guaranteed privacy, could usually comprehend enough of what they read to make the effort worthwhile. This distinction rather than test scores most clearly separated the two groups. What the groups shared was an almost complete lack of phonological awareness. Many adults who applied to PR complained of not being able to figure out the sounds of the letters. This was true of both partial readers and nonreaders; it was a voluntary admission, not a response to an interview question. Often it was coupled with the question, "Why am I like this?" or "What´s wrong with me?"

Functionally Illiterate - Assessment patterns:

The functionally illiterate had flatter profiles on assessments, with the exception, for a few, of oral comprehension. In this situation the brighter adults might deduce answers because questions were read aloud by the examiner. Thus the information necessary for approximating an acceptable answer might be gotten from the question itself. Standardized silent reading tests were not given to this group upon entry. Excluding oral comprehension, the range of scores within the profile was usually not over 2 grade levels.

Functionally Illiterate

Examples:	Student A	Student B
Oral paragraph accuracy (timed)	2	2.3
Oral paragraph accuracy (untimed)	3.4	3.8
Oral paragraph comprehension (untimed)	2.8	5.8
Single words	2.8	4
Word attack (phonics)	1.6	1.8
Intelligence	Moderate	Strong

Marginally Literate - Assessment patterns:

The marginal readers had more varied intake patterns; they showed more markedly up and down reading profiles. They were able to handle, academically and emotionally, silent reading tests upon entry. The use of context combined with sight vocabulary often, but not always, provided them with effective guessing strategies. Lowest scores varied between timed oral reading and word attack.

Marginally Literate

Examples:	Student C	Student D
Oral paragraph accuracy (timed)	3	2.1
Oral paragraph accuracy (untimed)	4.5	5.5
Oral paragraph comprehension (untimed)	7	5.4
Single Words	4	4.3
Word attack (phonics)	1.8	3.5
*Silent reading (untimed)	8.7	8.8
Intelligence	Strong	Strong

Through evaluation of counselor interviews, work and family history, classroom behavior, and staff observations, factors were identified that appeared to be critical to determining why an intellectually, physically, and emotionally normal adult fell into the illiterate or marginally literate cohort.

The factors were not ranked, but all seem valid for the question: childhood-family stability; childhood-family support or denigration of the non-reading member; employment success, level of health and emotional well being; degree of disability, spousal support, intelligence. It seems that several of these factors must combine to create the level of motivation necessary for the learning disabled adult to make the effort required for learning to read. For instance, two of the highest IQ adults were in the functionally illiterate group. One, an older man, had a severe disability and had received virtually no help from public school. The second had a very denigrating father who labled him the family dummy; he made no effort to get help until his caring wife discovered his secret. One marginal reader was aided by aware teachers and encouraged by his family to accept all the help he was offered.

A noticeable and truly remarkable quality of all but four or five PR students was sensitivity to other people. They praised each other's success and joked away each other's failure. They felt for anyone in the community who was in need. A number of them demonstrated this in active community service or giving.

*Silent reading protocal includes timing as a factor in scoring; we chose to ignore this.

DIFFICULTIES WITHIN THE STUDY

A major difficulty with PR as clinical reading research was the population size. Individual variability among adults is simply too great to allow for statistical significance in assessing learning results on a population of 18 to 20 adults. We believe; however, that the results are valid for the real world of adult learning and for the participants.

Drop Outs:

An initial group of 25 was selected for the purpose of having 20 reliable students for an instructional duration of two years. The drop out rate from this froup was 20% over the two years...five students. Two dropped out in the first year, three in the second. All five were with the program for at least three months. Three spent close to a year in the project, but had very erratic attendance due to health or personal problems, and were not available to be post tested.

Attendance:

Five additional students had erratic attendance patterns, but were able to attend frequently enough to be included in program results. For three of these the attendance was caused by work situations. All were dependent upon menial labor for family survival and had neither the ability nor the confidence to persuade ´bosses´ to give them the fixed schedules that regular attendance required. Two had health problems. It must be said that four of the five are now, a year and a half after the completion of PR, working with trained volunteer tutors to continue the one-on-one instruction. There is no question in the opinion of PR staff that irregular attendance patterns had a negative effect on the gains these students made. Four were in the RFS groups and one in the Comparison group.

Spread Among the Three Groups:

Six students were initially assigned to the Comparison group. Two of these dropped out; two requested repeatedly that they be given some "homework that would help them more with the sounds of letters and words". The latter two following at least six months in the comparison group were removed from it and placed into an RFS group. Additional students were added to the comparison group, thus it concluded with four members.

The Use of Standardized Tests

Standardized tests present a number of difficulties and challenges when used in a reading study with adult participants. 1. The variablilty of adult experience may reduce the individual test´s ability to accurately compare one adult with another. In other words, two adults may actually be reading at about the same functional level in the world, but the test may not reflect this because of the appearance of particular words in one test version and not in another that is supposedly equivalent. 2. Because they are oriented towards younger minds, their construction particularly in the areas of comprehension, is questionable for adult thinking. This is especially true of oral tests. 3. The bases some tests use for scoring are not useful quantifiers for adult reading, thus they distort the value of the result in the adult context. For instance, counting hesitations as errors decreases the amount of comprehension score that may be counted on an oral paragraph. This represents correct comprehension that must be subtracted because of time taken to read. 4. Test rigidity can have an effect on teaching flexibility, if tests are to be the sole arbiters of success.

Fortunately, work is being done in at least two universities in the area of developing more flexible assessment tools. Needed are methods to accurately measure student academic gain and assure program accountability in a context appropriate for adult learners. This context must include valid and reliable measures for assessing real world reading gain.

PART IV RESULTS OF READING REMEDIATION

STATISTICAL RESULTS OF CURRICULUM/METHODS COMPARISONS

Introduction

It must be said at the outset that, regardless of curriculum or teaching method used, all students made progress. Even the group making the slowest progress, gained a little faster than the rate of an average child learning to read in school. Considering that these LD adults had learned at nowhere near this rate while in school as children, something new and positive was happening. We believe that the gains made during this project, document the differing effectiveness of the types of materials and the methods used.

However, we also acknowledge the impact of other factors which, regardless of curriculum or method used, may have contributed to our students renewed readiness to take part in a reading program, to their persistence in remaining in the program long enough to experience real success, and to their ability to accomplish the actual reading and writing tasks. These factors include: 1) The emotional maturity of adulthood and, possibly for some, neurological maturation. 2) Motivation renewed by success in other areas of life, by the economic pressure to get a better job to support family or get off welfare, or the opposite, by the leisure afforded by retirement. 3) The degree of individual attention from the teachers and constant individualization of the teaching to meet the particular needs of the students. 4) Reduced auditory and visual distractions because of the small size and location of the classes.

Whatever the combination of factors was, the adults in project READ made progress in reading...with some of the groups making more progress than others.

The groups compared in this study are: students taught with the curriculum, Reading From Scratch; students taught with Reading From Scratch, with equipment; and a small group of students taught with a Comparison Curriculum. The average reading level at entry, from the battery tests, was 3.6 for RFS Equipment Group, 4.6 for the RFS No-Equipment Group, and 3.3 for the Comparison Curriculum Group. Between entry and exit assessments, the RFS Equipment Group averaged 201 lessons, the RFS No-Equipment group averaged 224 lessons, and the Comparison Curriculum Group averaged 210 lessons.

Types of Comparison Among the Groups

The curriculum and methods groups are compared on the basis of their gains on standardized reading tests. Further comparisons are made on tests which focus attention on comprehension. Test results are presented as demonstrating both the rates of reading-gain and grade level gains.

Rate of Gain

One of the difficulties in comparing reading gains among the groups is the different number of lessons producing those gains. A solution to this was found in van den Honert's formula for calculating the rate of reading-gain per lesson as a proportion of a month. This rate can then be compared with the average rate of reading-gain produced by public school instruction, assuming a one grade improvement in a 10 month school year of 180 lessons. Admittedly, an adult receiving individual instruction is not equivalent to a child learning in a class situation. However, this comparison does render the numbers into a meaningful form.

Formula: 1. Gain in months divided by the total number of lessons equals the monthly rate of gain per lesson.

2. Then, the monthly rate of gain per lesson divided by the average monthly rate of gain per lesson for the average school child (.055) yields a number which shows how an individual's or group's rate of gain compares with the expected rate of gain.

This formula allows us to compare one group of students whose reading gain, for example, might average 2.9 years in 123 lessons, with that of another group averaging a gain of 2.7 years in 98 lessons. And then to make this comparison meaningful, they both may be compared with the average rate of gain of the public school population. Thus, the most important type of comparison for this study is rate of reading-gain.

Grade Level Gain

Grade level gain is simply the number of years and months by which the final grade level exceeds the entry grade level. A 3.1 grade level gain should be read 3 years 1 month.

II. Comparisons of the Groups

Group Comparison I. RFS - Comparison Curriculum

In the first comparison between groups, students being taught with the Comparison Curriculum, were matched with students receiving RFS instruction. From the total RFS student population of 15, the 8 RFS students having entry reading levels comparable to those of the 4 Comparison Curriculum students were selected to be their matches. We rejected matching one-to-one, 4 students from RFS with the 4 CC students. The reason was the wide discrepancy between the gains made by the 4 highest achieving and the 4 lowest achieving students in the population of RFS students whose entry scores qualified them to be matches for the CC students...although even the 4 lowest achieving students in RFS gained at a faster rate than the CC students. It was decided that the truest picture of the gains made by the RFS students would be shown by including both the 4 students gaining the most and the 4 students gaining the least.

The primary criteria for the matches was the average score from the battery of five standardized reading tests given at entry into the program. The average RFS reading level at entry was 3.1 years... slightly lower than that of the CC Group which was 3.3 years.

In addition, intelligence, attendance, age, and health or sensory problems were factors which were considered, to make sure that the groups were balanced. In all instances care was taken to insure that the CC Group was not at a disadvantage in these areas.

The first comparisons between RFS and CC are on the Gilmore Oral Reading Test, and the word attack test.

RFS - Comparison Curriculum

Oral Reading and Word Attack Gains

			Oral Reading		Word Attack	
	# in Group	Av. #of Lessons	Accuracy Gains	Comprehension Gains	Gains	RATE OF GAIN
Comparison Curriculum	4	210	1.9	1.3	1.8	1.5 times expected rate
RFS	8	203	2.6	4.2	3.0	3.1 times expected rate

Figure 1.

In figure 1. it can be seen that after 210 lessons, the average grade level gain for the CC students in accuracy on the Gilmore Oral Reading Test was 1.9 years, and the RFS gain after 203 lessons was 2.6 years. The CC group's average gain in comprehension was 1.3 years, while the RFS group's gain was 4.2 years. On the word attack test, the CC group's gain was 1.8 years, while the RFS group averaged 3.0 years.

Rate of reading-gain:

Because of the different number of lessons, the rate of gain was more disparate for the two groups. The rate of reading-gain of the CC group was 1.5 times the average, which was considerable in light of their previous slow gain while in school. However, even more impressive was the rate of gain of the RFS students, which was 3.1 times the average rate of the public school population. This rate of gain was double that of the CC group.

Since there was a considerable difference between the scores of the two groups in comprehension, a second comparison was made between the RFS and the CC groups: gain in comprehension as measured by the Gilmore Oral Reading Test and by silent reading comprehension tests...primarily the Stanford Diagnostic Reading Test.

The Stanford Diagnostic Reading Test was not administered as a pre and post test for the low level reader. The Stanford was given at about the program's mid-point, and at the program's completion. Four students had been given a different, comparable silent reading comprehension test before entering the Project READ program, so their reading gains are from one silent comprehension pre-test to the Stanford on an equivalent test-post test schedule. Two students' entry silent reading comprehension scores are estimated: the RFS student...who happened to be in equipment...was given an estimated entry silent reading comprehension score two years higher than his oral comprehension score, and the CC student was given an estimated silent reading comprehension score two years lower than that of her oral comprehension. This was to maximize the gains for the CC group and minimize the gains for the RFS group so that if there were any bias, it would favor the CC group.

In spite of these conditions, which mean that the silent reading tests cannot be considered in research terms to have absolute reliability and validity, those gains have been included because they do, indeed, reflect the effect of a measured number of reading lessons on the students' silent reading comprehension. Those gains are considerable, and we felt, worth including.

RFS - COMPARISON CURRICULUM

Oral and Silent Reading Comprehension Gains

		Oral Reading Comprehension		Silent Reading Comprehension			
	# in Group	Av.# of Lessons	Grade Gains	Av.# of Lessons	Grade Gains	Combined Gain	Rate of Gain
Comparison Curriculum	4	210	1.3	150	.2	.8	.6 times expected rate
RFS	8	203	4.2	126	3.6	4.0	4.6 times expected rate

Figure 2

In comparing the CC group with the RFS group in silent reading comprehension, and in oral reading comprehension, it can be seen that the CC group gained only 2 months in silent comprehension. This, together with their 1.3 year gain in comprehension gain on the oral reading test meant an average comprehension gain of only 8 months. Rate of reading-gain: CC group had just over half the rate of comprehension gain expected in public school.

In contrast, the 8 RFS students made a silent reading comprehension gain of 4 years and a 4 year 2 month gain on the oral test.
Rate of reading-gain: This produced a rate of reading-gain for the RFS group of 4.6 times the average.

This comprehension increase shows that, for the Project READ sample, although it was phonics instruction and not comprehension instruction which was the focus of the RFS curriculum, comprehension did not just follow increased ability to decode phonetically, it exceeded it considerably.

Group Comparison II. RFS Equipment - RFS No-Equipment

In the second comparison between groups, the group taught the RFS curriculum with the aid of special equipment, is compared with the group taught the RFS curriculum, without equipment. There were eight students in the Equipment group and seven in the No-Equipment group. The average entry battery reading score for the No-Equipment group was approximately 1 year higher than that of the Equipment group. The Equipment group had an average of 184 lessons, while the No-Equipment group averaged 216.

Other than these differences, the two groups were balanced in a number of ways. Each group had a student who dropped out after a year...one, because of health, the other because he was in college and felt he did not need further remediation. Each group had 2 students with poor attendance. Each group had a 67 year old and the remainder in their 20's-40's. Each group had a member with health problems. The Equipment group had a member with speech difficulty; the No-Equipment group had member who had diabetes related vision problems. Both groups had a member with age related reduction in hearing.

We have based the first comparison of the Equipment and the No-Equipment groups upon the Gilmore Oral Reading Test: accuracy and comprehension.

The results of this comparison are shown in Figure 3.

RFS Equipment - No Equipment

Oral Reading Test: Accuracy and Comprehension

	# in Group	# Lessons	Rate of Reading-Gain Accuracy	Comprehension
RFS Equipment	8	184	2.94 times expected rate of gain	5.1 times expected rate of gain
RFS No Equipment	7	216	2.97 times expected rate of gain	3.6 times expected rate of gain

Grade Level Gain			Accuracy			Comprehension		
	# in Group	# of Lessons	Entry Grade	Exit Grade	Gain	Entry Grade	Exit Grade	Gain
RFS Equipment	8	184	4.4	7.0	2.5	5.0	9.6	4.6
RFS No Equipment	7	216	5.4	8.9	3.5	6.4	10.6	4.2

Figure 3

Rate of reading-gain: The fewer lessons by the Equipment group produced a rate of gain for the whole test 4 times the average vs. 3.3 times the average for the No-Equipment group. The rate of gain in accuracy is almost identical for both groups...2.94 times the average for the Equipment group vs. 2.97 for the No-Equipment Group. It is the Equipment group's much greater rate of gain in comprehension that makes the difference. The Equipment group's rate of gain in comprehension is 5.1 times the average while the No-Equipment group's gain is "only" 3.6 times the average.

Six members from each of the two groups had two silent reading comprehension tests separated by a known number of lessons. Since it was on the comprehension part of the oral reading test that the two groups demonstrate their greatest differences, oral and silent comprehension gains for the two groups are compared.

Rate of reading-gain: When the rates of gain are calculated for the two groups in silent reading comprehension, they turn out to be essentially identical...5 times the average rate. When the oral reading comprehension scores are combined with the silent reading comprehension scores, the resulting rate of gain in reading comprehension is 5.1 times the average for the Equipment group, and 4.3 times the average for the No-Equipment group. See Figure 4.

Oral and Silent Reading Comprehension Gains

Rate of Reading-Gain

	# in Group	# Lessons	Combined Rate of Gain
RFS Equipment	8	184	5.1 times expected rate
RFS No Equipment	7	216	4.3 times expected rate

Grade Level Gain

	Oral Comprehension			Silent Comprehension			
	# in Group	Av.# of Lessons	Grade Gain	# in Group	Av.# of Lessons	Grade Gain	Combined Gain
RFS Equipment	8	184	4.6	6	139	3.8	4.2
RFS No Equipment	7	216	4.2	6	141	3.9	4.0

Figure 4.

Group Comparison III. The Expanded RFS Equipment Group (Project READ and Project HELP students) - RFS NO-Equipment Group

In order to increase the number of experimental subjects, in the Equipment vs. No-Equipment comparison, we added 7 students from a previous reading program. "Project HELP", to the 8 students in the Project READ Equipment group. All of the Project HELP students had been given the same entry and exit oral reading test to assess their reading levels as Project READ students; were considered to have a reading disability; and were taught exactly as we taught the current Project's Equipment students. Four of the Project HELP students have since gone on to college. Their scores at the time they entered the program averaged 5.1 in accuracy and 4.0 in comprehension...lower than the entry scores of the RFS No-Equipment students of Project READ.

Rate of reading-gain: It is when rates of learning-gain are compared that the differences are significant. The No-Equipment group rate of reading gain on the full test was 3.3 times the average, while the Equipment group's rate was 5.4 times the average. Once again it is in comprehension that the large difference is seen, with the Equipment group's rate of reading comprehension 6.5 times the average rate of gain expected in the public schools. See Figure 5.

When the scores of Project HELP and Project READ Equipment students are combined, in an average of 154 lessons, the accuracy gain is 2.9 years; the comprehension gain 4.7 years. This is compared with the No-Equipment students who had about a third of a year more lessons...216...and who gained 3.5 years in accuracy and 4.2 years in comprehension.

EXTENDED RFS EQUIPMENT (Project READ + Project HELP) - NO-EQUIPMENT
Oral Reading Gains

Rate of Reading-Gain

	# in Group	# Lessons	Accuracy	Comprehension
Extended RFS Equipment	15	154	4.3 times expected rate	6.5 times expected rate
RFS NO-Equipment	7	216	2.97 times expected rate	3.6 times expected rate

Grade Level Gain

	# in Group	Av.# of Lessons	Accuracy Grade Level Gains	Comprehension Grade Level Gains
Extended RFS Equipment	15	154	2.9	4.7
RFS No-Equipment	7	216	3.5	4.2

Figure 5

SUMMARY OF STATISTICAL RESULTS

Analysis of initial and concluding reading test scores demonstrated differences in the gain and in the rate of gain among the three groups. Gain was presented as a grade score. Rate of gain reflected both the grade level gain and the number of lessons required to attain it. It was the more meaningful measure for this study. Rate was expressed as a comparison with the average rate of gain produced by ordinary public school instruction (one year of reading gain for one year of instruction).

A four member Comparison Curriculum group (CC) was matched with an eight member RFS group on an untimed oral reading test and a word attack test. The average grade level gain for the CC group in 210 lessons was 1 year, 6 months, while the RFS grade level gain in 203 lessons was 3 years, 3 months. This resulted in a rate of gain for the CC group 1.5 times the average rate produced in public school and for the RFS group, a rate 3.1 times the average.

The difference between the two groups was especially noticeable in the area of comprehension. When compared on oral and silent comprehension, the CC group gained just 8 months, for a rate of gain .6 of the average public school rate. The RFS group had a comprehension gain of 4 years, for a rate of gain 4.6 times the average.

An eight member RFS Equipment group and seven member No-Equipment group were compared on untimed oral reading. The No-Equipment group gained 3 years, 9 months in 216 lessons while the Equipment group gained 3 years, 6 months in only 184 lessons. This yielded rates of gain of 3.3 times the average for the No-Equipment group and 4.0 times average for the Equipment group.

It was in the comprehension part of the oral reading test that the greatest differences were found: a rate of gain of 3.6 for the No-Equipment group vs. a rate of 5.1 for the Equipment group.

In silent reading comprehension, the two groups attained nearly the same gain: 3 years, 9 months for the No-Equipment group, 3 years 8 months for the Equipment group in essentially the same number of lessons so that the rates of gain were also the same...5 times the average. When the scores from the oral and silent comprehension tests were combined it produced a rate of gain 4.3 times the average for the No-Equipment group and 5.1 for the Equipment group.

These trends are further supported when the LD adult students from a previous reading project, who also had been taught with the RFS curriculum with equipment, were added to the Project READ Equipment population. The results of the untimed oral reading gain with the combined population show a rate of gain 5.4 times the average and a rate of comprehension gain of 6.5.

The results of this study indicate that the group taught with the use of equipment showed the greatest gains, followed by the group with which the RFS curriculum was used, but without equipment.

For every RFS group, comprehension gains, oral or silent, outstripped gains in phonetic and word structure decoding, the very processes which RFS stressed. This suggests that dyslexics in PR gained enough phonological understanding and consequently enough practice in the use of phonological and word structure clues to free them to attend to comprehension.

The EQ group recorded the highest comprehension scores; the question is why was this the case? Did the equipment ´lateralize´ the students, aiding the language hemisphere to better sequence sound and symbol; to better process written and oral information? We don´t know. Perhaps it primarily screened out distractions and focussed the students´ attention. Or, for students with auditory discrimination problems, a boost in clarity of sound from the use of earphones directing the reading to the auditory channels and blocking out extraneous sounds may have made a difference. We believe that the results do indicate the need for further studies on a larger sample to assess the value of the use of the technique to enhance remediation. And if the results can be replicated, to then ascertain what it is that is causing the differences.

REAL WORLD RESULTS OF READING REMEDIATION

While reading assessments may provide numerical evidence that improvement has taken place, the effects of the improvement can also be seen in the lives of the students. Evidence here has been taken from two sources: (1) student statements: of changes in reading activities, changes in what they are able to do in their daily lives, in their plans for the future, in their relationships, and in the feelings they have about themselves, and (2) the objective behavior of the students.

1. Student Statements of Changes in Their Lives

Reading Activities

At the Project READ exit interview, all the students reported that they were reading outside the class, with newspapers and books leading the type of materials read. Almost as many were reading magazines, and several mentioned work-related reading, such as reports, memos, and blueprints. Very few, only two or three students, were doing any reading at home before Project READ instruction. A number began to try to read street signs, T.V. announcements etc., early in the program. Several reported that they only began to read outside class during the latter half of the second year, or after its completion...in spite of much encouragement by their teachers.

Changes in Their Daily Lives

Two students reported being able to manage their own finances for the first time. Several said that being able to read maps and road signs enabled them to travel beyond familiar surroundings and with less anxiety. Also mentioned were: greater confidence on the job; being less impulsive than formerly; being able to write notes to family for the first time.

Plans for the Future

Over half of the students said that their plans for the future were different from what they were when they began the program. Of those students, half thought that the "next step" would be more education.

Changes in Relationships

Mentioned in the Exit Interview were: less dependence on spouse; greater understanding of their LD child; family members being more understanding of the student.

Changes in Their Feelings About Themselves

When asked in the Exit Interview how their feelings about themselves had changed, 70% of the students specifically indicated that they had more confidence in themselves or had higher self esteem. The other 30% were not specific; they just "felt better".

2. Students' Objective Behavior

Three areas of students' lives were selected for examination because behavior in these areas was overt: job changes, the seeking of additional education, the identification of themselves as LD when appropriate.

Job Changes

Sixty % of the students...excluding 4 retirees and 1 full-time student...changed their jobs to meet raised job goals or because of increased self-valuation.

1 student got full-time permanent employment for the first time.
2 students left stressful, demeaning jobs they'd held for years, going to jobs better for them.
4 additional students went to better jobs.
3 students got job promotions.
1 student started a new business.

Education

Seventy % of the students actively sought and acquired additional education and/or skills.

6 students studied for the GED, for the Adult High School Diploma, and/or for a college diploma.
3 students were studying for licensure (class 2 drivers license or hydraulics license).
6 students (3 Comparison Curriculum, and 3 RFS students) sought continued tutoring to improve their reading.

Self-Identification as Learning Disabled

Sixty-five % of the students are known to have identified themselves as having a learning disability when it was appropriate.

3 students identified themselves as LD as they advocated for their LD children in school; one of them even starting a LD parents' resource group.
1 identified himself to police as having a speech and learning disability in order to show that his slurred speech and inability to recite the alphabet were not due to intoxication.
4 "went public" in radio, video taped or newspaper interviews, as a panelist at a conference, and as an Adult Learning Center graduation speaker.
1 identified himself as LD as he approached his union to support literacy tutoring.
13 wrote letters to Governor Dukakis in support of adult education funding, identifying themselves as LD in the letter.

ANALYSES OF READING PERFORMANCE

The following is a description of reading performance of PR students, based on analyses of selected standardized tests. The analyses were done on students taught with the RFS curriculum.

Because we define reading as the ability to obtain meaning from print, accurate comprehension becomes the measure of reading success. What factors prevent or inhibit LD readers' ability to accurately comprehend the visual patterns...letters, words, sentences...that represent language?

Certainly individual histories and personalities account for some variability among adults, and will affect the performance on standardized tests. For example, one PR student initially given two different but equivalent forms of the same oral reading test, had a full year discrepancy between the two scores. This proved due to a work history from which he gained a sight vocabulary, words of which showed up on one form of the test and not on the other. A second student sometimes became suspicious when he became aware of being observed in the testing situation. On one assessment, the assessor, a teacher with whom the student was comfortable, quietly marked the time at intervals during the testing. The student scored lower than he had on the pre-test. He was the only student with such a result.

In spite of these variables, we believe the test-retest method, especially when substantiated by real world gain, does provide a useful measure of academic accomplishment. Also made possible are observations of specific changes in the reading performance. In addition, the testing situation itself can give the student both practice and insight transferable to life situations.

Time Limits and Reading Performance

The amount of time required to complete a given passage is a reflection of the ease and flow with which the passage is comprehended. Hesitations...representing increased time needed to decode unfamiliar words, and repetitions...excessive rereading of individual words or phrases, interfere with comprehension. Even when one is monitoring oral reading, these behaviors may be difficult to measure accurately. However, the degree of their presence is certainly observable, and their impact may be assessed by recording the time taken for the reading task. Of course, one must always ask, "How important is time to the particular situation?"

For the purpose of this analysis, two types of comprehension scores were calculated for 11 students on Gray Oral Reading Tests.

Type 1. The number of paragraphs read in which the student got at least half of the comprehension questions correct for the paragraph.

Type 2. The percentage of correct answers to the 44 questions...the total score possible...from 11 of the 13 Gray Oral Paragraphs. (Paragraphs 12 and 13 were determined by readability formulas to be too difficult and of too obscure a vocabulary for a realistic assessment of the average adult American reader.)

Pre and post scores of types 1 and 2 were obtained, both timed and untimed scores were calculated. Untimed assessment allows the reader to continue reading to the point where he fails to comprehend. Timed assessment sets a time limit for the task.

Pre and Post Test Results

Type 1. Total number of paragraphs read in which the 11 students' comprehension was 50% or better.

	Timed		Untimed	
	Pre	Post	Pre	Post
Number of paragraphs	44	62	65	94
Gains ranged from	-1 to +5		+1 to +7	
With most showing gain	+1 to +2		+3 or +4	

Type 2. Average comprehension score on 11 possible paragraphs; a perfect score on 11 paragraphs would be 100%.

Timed		Untimed	
Pre	Post	Pre	Post
31.5%	49.4%	45.1%	76.3%

The range of timed gain was from 2% points to 46% points. The average range of gain removing the two extremes was 19.5% points.

Discussion

Adult educators take care to provide stress-free learning environments for their students. The real world does not. Long after a once illiterate adult has proven that he or she can read and comprehend as well as or better than the average adult American, the fear of being unable to do so in the presence of other people may remain. There may well be justification for it. Some LD readers will always process written language more slowly; many of them will read better on some days than on others. Timed reading assessments can be used to demonstrate to individuals their own growth. Combined with timed reading exercises, they may also be used to provide practice, should it be appropriate, in producing in a demanding situation. At the least, they give a true picture to a mature adult of how he is performing as measured by standards realistic for the general population.

Error Patterns Exhibited in Oral Paragraph Reading

Certain types of errors, or miscuing of words and phrases have been identified by all PR teachers as present in varying degrees among their students. (Please see accompanying chart)

	Should Read	Reads
1. Slow pace of processing written language.		
2. Confusion of short vowel sounds.	led met	lid mat
3. b/d/p reversal and m/n confusion	lad dip	lab bid
4. Reversal of letter positions within the word -a sequencing disorder.	(writing) John cast (reading) was odor	 Jhno scat saw door
5. Perseveration of sound patterns.	hunt,gut slip,sap	hunt,gunt slip,slap
6. Adding ´phantom letters´ l, r, n.	chimney stunk hem	chimley strunk helm
7. Substitutions: a) synonyms b) regularization of words	dad home .... ulnat	father house unless
8. Ignoring endings of words and misusing functors.	parked of the	parks to a
9. Extreme difficulty reading words in isolation that can be read in paragraphs.		
10. Making nonsense words out of open syllables -inability to distinguish between real and nonsense words in a word building task.	stra... twi...	strap stram twib twig
11. Phonetic spelling.	(writing) Many people	 Meny peple

12. Great difficulty in understanding the visual symbols used to represent possessive nouns, so that they can write them correctly.	
13. Longer words are often reread more easily because of the more rigid consonant frame on which to hang sounds: rhythm.	Halloween easier to read than hoed. Neighbor easier than sieve.
14. Initial failure to generalize a specific skill even within the learning environment.	
15. High level of distractibility.	Sounds, movement
16. Forgets material from day to day.	

Literature on dyslexia confirms that these error patterns are indeed typical of learning disabled/dyslexic readers...meaning that they are prevalent among these readers and tend to persist, in varying degrees, even when performance has improved. The delayed reader who is not learning disabled may initially make some of these same errors but they will largely fall away as reading is mastered.

We wished to consider:

1. The relative effect of such errors on comprehension

2. Whether the instruction resulted in a decrease in these particular errors and thus their effect upon comprehension.

To make this evaluation, errors were classified and counted on pre and post oral reading passages in which comprehension fell at or below 50%. The following four classifications were defined and used.

1. Error Patterns Suggestive of LD
   - Adding, omitting, altering of word endings: hopes - "hope, hoped, hoping". Occasionally if an ending is misread early in a sentence, subsequent words will be altered to maintain correct grammatical form: Jane walked to the store, gave the clerk her purchase and handed him a dollar - "Jane walks... gives...hands...".

   - Adding, omitting, altering function words: the -"a", this - "those", his - "hers - him", which - "when"

   - Omitting or inserting whole words or phrases

   - Adding, omitting, missequencing the letters /L/ and /R/: slit - "silt", convey - "conveyled", thrill - "thid", prior - "period"

2. Guessing to Regularize

- Guessing based on visual cues...letter or word configuration... that results in a word that has no meaning in the context of the passage: Mary went to the party - "March went to the party".

The regularization seems to be the need to make a word whether or not the reader is comprehending. This shows up on word attack tests which employ nonsense syllables to assess knowledge of phonetic rules. Even though told that the list presented does not contain real words and cannot be read as such, many LD adults seem compelled to read the syllables as words. How much of this is self protective habit and how much processing error, is difficult to assess.

3. Meaningful Guessing
   a. Word substitution in which the word guessed is a reasonable substitute, fairly true to the context of the passage: house - "home"
   b. Word substitution in which the substitution makes sense in the context the reader has interpreted. This context may be inaccurate because of digression caused by one of the above errors; it strays further as the reader attempts to hold meaning: - "A run was required to defeat the much feared champions. - "A run was requested to defeat the marching force." It must be noted that often erroneous guesses are set off by words with "r" and "l" in them.

4. Mispronunciations and Intentional Omissions

In these cases, the reader simply cannot read the word, cannot obtain enough visual, structural or context clues from which he would even guess. He is over his head!

The pre and post tests of 16 RFS students on combinations of Gray Oral passages and passages from the Gilmore Oral Reading test were analyzed. The full group of 16 was considered first, then selected out from the group were 5 adults who were classified as marginal readers. (For the definition of marginal readers in this study, please see, Population Description.)

Using paragraphs with highest comprehension scores for individuals, students were profiled on either one or two paragraphs, pre and post, depending upon paragraph length. The post test paragraphs are of a more advanced level, according to the gains made by individual students.

A - Full Group	Pre-Test	Post-Test
Number of Students	16	16
Total Number of Errors on 27 paragraphs	308	318
Error Types as Percentages of Total Errors		
Learning disability patterns	40%	27%
Guessing to regularize	16.6%	12.3%
Meaningful guessing	14%	11.2%
Mispronunciations or intentional omissions	29.2%	49.4%

B. Marginal Readers	Pre-Test	Post-Test
Number of Students	5	5
Total number of errors on 9 paragraphs	69	56
Error Types as Percentages of Total Errors		
Learning disability patterns	52%	27%
Guessing to regularize	19%	8%
Meaningful Guessing	12%	7%
Mispronunciations or intentional omissions	17%	59%

Discussion

It was expected that learning disability type errors would decrease significantly as a percentage of errors made. Conversely it was expected that gross mispronunciations or omissions would increase, indicating that on post tests it was largely the difficulty of the material that defeated the reader, rather than errors of processing.

For both the full group and the marginal group 27% of the errors on post testing were of the learning disability type. This represented a decrease of errors of this type of about one third for the full group. For the marginal readers, it represented a decrease of about one half. It is interesting to note that the marginal readers' initial errors were primarily processing mistakes. These equal 71% of their mistakes when the guessing to regularize is included. This same combination represents 35%

in post testing. One member of the marginal group skewed the result, by making an increase in learning disability type errors. Removing his score brings the drop for the remaining four to close to two thirds.

Silent reading comprehension tests were not given to two thirds of the students selected for PR upon entry. Silent reading tests constructed at the adult level were beyond the grade level at which most of the students could read. It was decided that this would be unnecessarily stressful for students, and it would not provide a usable result. Silent reading was measured for marginal readers. (Out-of-level silent reading tests, those at grade levels matching the entry levels of students, are useful for instructional purposes. For recommendations on their use, see Assessment Recommendations, page 73) Silent reading tests were given to the students at varying points throughout the study. Though the test protocols set time limits for the tests, PR staff allowed completion of the test, noting the time, but not computing it into the score. As the Results of Reading Remediation section of this report shows, significant gains were made in silent reading comprehension sometimes even when results in other areas were not as strong. The interest for this discussion is the quality of the performance. Analysis of silent reading tests on all students showed that the types of errors made did not differ markedly from pre testing to post testing. Errors of inference were compared with literal errors, the ratio stayed the same.

Only one student completed the first silent reading test in the time suggested by the test protocol. In post testing close to half completed in the allotted time.

PERFORMANCE ON INDIVIDUALLY ADMINISTERED INTELLIGENCE TESTS

Wechsler Adult Intelligence Scale - WAIS

On standardized adult intelligence tests, learning disabled readers usually perform differently from their age peers. This observation by specialists in the field held true for the population of PR adults. Part of this difference can be ascribed to what information the tests call for and part to what types of cognitive processing they call upon.

The reasons for some of the differences between learning disabled readers and age mates appear quite straightforward. If individuals are illiterate or marginally literate, they will likely be missing some of the common cultural information called for by IQ measures, information which is often required reading in school, or is picked up in books, magazines, and newspapers. Unless illiterate individuals have come from the more privileged of homes and/or communities where conversation and discussion are part of the daily fare, their vocabularies will also be less well developed than those of their reading peers. If they have done virtually no writing then they are likely to fare poorly on tasks requiring speedy and accurate copying of printed symbols.

In the cognitive realm there are areas of processing that are noticeably difficult for many adults with learning disabilities. again, we are talking about what has been observed by practitioners. Scores on tasks calling upon short term auditory memory or sequencing, or speed of performance, are frequently low. Low in this context means in relation to the individual´s performance on other components of the test. Arithmetical computations that must be done without benefit of pencil and paper, thus requiring memory and ordering of numbers, are particularly difficult.

The above types of tasks appear frequently on IQ tests, particularly, the quicker and more easily administered versions, the "screening tests". These components (auditory/visual memory and sequencing, speed, cultural information and exposure) of any IQ test can hardly be true measures of intelligence for the learning disabled individual, nor for the illiterate individual who may not be learning disabled. Yet these same measures because of how heavily they weight tests, have been, and continue to be, the justification for the labels some of our students carry..."slow learner"..."mildly retarded". It is for this reason that we cannot simply dismiss IQ tests, but must speak up about their proper use.

Learning disabled adults most often demonstrate their "solid" intelligence in the areas of reasoning: practical, social, and abstract. They demonstrate these capacities on both verbal and non-verbal measures. On tests that assess their comprehension of how things and people function in the everyday world, the disabled readers score just as do their reading peers...according to their native capacities.

We are required to ask then, what is intelligence, and what are these tests measuring; and finally, are they of any value in the consideration and instruction of learning disabled adults? For mere teachers to even raise such questions, questions which have so baffled philosophers, scientists and psychologists may seem brazen; if so, let us be brazen because we are the ones who "see" people as they perform, as they act every day. And what is intelligence, but productive action, successful behavior in the real world. It is the ability to perceive the real world, interpret it, consider it and act in concert with it. IQ tests cannot measure all that is critical in the operating intelligence of an individual, especially an adult individual who has had a multiplicity of unique experiences. What IQ tests can measure within standard limits of error is: current level of cultural knowledge, and performance in certain cognitive behaviors that are necessary to academic success as defined by our educational systems.

Our next question then, is can we use these tests to help us understand both our students' difficulties and their strengths for the task of learning to read? Since a number of the factors important in learning to read and in comprehending what is read correspond to the behaviors critical to academic success, the answer is, yes. They can certainly provide information valuable to the teaching.

Two issues are critical: 1. We must not accept an IQ score that presents any student in a diminished capacity unless we see, understand and accept the interpretation of all the individual subtests that produced that score. 2. The individual sub-tests can and should be used to evaluate for each individual, current performance on tasks that may be involved in the acquisition and use of written language. What are the strengths the teacher may make use of; what are the weaknesses that will have to be attended to? How much reasoning ability is present to support the acquisition of the more structured and mechanical sub-skills of reading; skills which will be more difficult for the learning disabled adult to master?

Project READ Students and the WAIS

The WAIS consists of eleven subtests, six of which measure components of verbal ability and five of which measure components of performance ability.

Verbal Measures

specific information
vocabulary
general comprehension
abstract reasoning
memory for numbers in sequence
"mental" arithmetical problem solving

Performance Measures

visual memory/alertness
social reasoning
whole/part relationships
perception and analysis of forms
speed/accuracy copying visual symbols

These subtests combine in three scores: Verbal IQ, Performance IQ, and Full IQ. The average or normal range on each of the three scores is defined as 90 - 109: approximately 50% of the general population falls within this range. On sub-scores the average range is 9 - 11.

Many specialists in the field of learning disability consider a high degree of scatter among the subtests and a resulting discrepancy between verbal and performance scores to be a clue to possible learning disability. There does seem to be some agreement that the performance score is more likely to be the higher of the two part scores for the learning disabled person, though certainly not always. There is not agreement as to what degree of discrepancy is significant. However, a difference of 10 points or more would suggest that the profile be further analyzed for subtest highs and lows, strengths and weaknesses, the profile may then be considered together with other cognitive measures, and an educational history for a fuller picture of possible learning disability.

PR used the test in three ways: 1. To screen out individuals of limited intellect who would skew the reading study. Such an individual is recognized through a flat profile...similar, borderline or below normal scores on all or most subtests. 2. To confirm staff estimates of normal intelligence with clinical evidence. We felt this to be important in a research study. 3. To gather subtest data on adults we considered to be learning disabled.

The PR population showed some interesting results on the WAIS. All but two adults tested, fell within the average range, 90 - 109, on the Full IQ score. We believe several would have scored higher were it not for the impact of illiteracy and learning disability on the WAIS. The two scoring outside this range fell in the low average cohort, 80 - 89. There were noticeable differences between verbal and performances scores, in just over 80% of the PR population. Nine of these had differences ranging from 10 to 30 points, between the two scores. It would appear that for PR adults, verbal performance is depressed when reading is depressed.

A particularly intriguing outcome was that, even though 80% had lower verbal than performance scores, 70% had their highest individual scores on verbal subtests...general comprehension and abstract reasoning. These scores ranged from average to superior. Only two had scores that fell outside the 90 - 109 average range in these areas. Both of these fell into the low normal range, 80 - 89. One of these scores was achieved by a college student, who went on to complete a two year degree. The reason for the lower score in the verbal subtest measuring comprehension remained a puzzle.

The lowest single score for over half the students was in the copying of visual symbols, a performance test. In fact, only two people fell within the average range on this subtest, the absolute average being 10. The college student had a 15, but the average for the remaining adults was 5.9.

Additional low scores for the group were the verbal tests of memory for numbers in a sequence, arithmetical computation vocabulary and information. Most of these scores fell from the low average to the borderline range.

The language processing difficulties of learning disabled adults may slow down the acquisition of written language skills, and even the facility with which written language skills are used once they are mastered, but...they do not diminish intelligence. Normal intelligence, superior intelligence, diminished intelligence are all present in the population of individuals who have learning disabilities. Certainly those individuals of higher intellectual capacity will have more resources with which to attend to the difficult tasks of mastering written language skills.

The important fact for teachers and counselors is that correctly analyzed individual IQ tests may offer information valuable in determining whether or not an adult is learning disabled. Looking at it from another perspective, individual IQ tests, are very useful in describing the verbal and performance capacities of learning disabled readers; they do have proven value in predicting how an individual will perform in certain types of academic tasks at the present moment. The most challenging task then becomes that of the teacher in using the information generated by IQ tests to aid in the design of the instructional plan.

RESULTS OF PSYCHOLOGICAL EVALUATION

It was our very strong impression, arising from experience with reading disabled students, and strengthened by articles we subsequently read, that LD adults had poor self esteem, and that they were often depressed and anxious. In working with students, we have learned that they incorporate into their self concept erroneous and/or damaging ideas about themselves. They describe themselves as children as lazy, "different", a tough guy, or excessively good, a day dreamer, the class clown, the class troublemaker, or the class dummy.

The frustration and anger from the long years of reading failure, are turned against society, other individuals, against themselves as in a depression, or sublimated into hard work. Often the anger is hidden, only emerging as some success in reading is experienced in class.

In Project READ we wished to test the accuracy of our impressions that LD adults tended to be anxious, depressed, and to have low self esteem. Further, we wished to ascertain whether reading remediation would result in changes in these qualities. In-depth interviews, ongoing staff observations, and the students´ own reports, provided insight into each student´s emotional well-being. The psychological tests provided an additional perspective.

Teacher and Counselor Observations of Student Behavior

Certain reactions and behaviors have been observed in enough students during the process of remediation that they are worth reporting:

1) The emotional catharsis at intake associated with the telling of the painful educational experiences of childhood establishes a bond with the teacher/counselor and an emotional investment in the program, strengthening motivation.

2) The reaction to information about their reading problem is usually one of relief that they aren´t "dumb", and relief at finally having the pieces of a puzzle come together to explain what, for their whole lives, may have been a mystery.

3) Initially, students experience both a feeling of embarrassment and pain at confronting again the area of life where they have been least successful, and an eagerness based on often unrealistic expectations that they will be able to learn quickly this time.

4) The awareness that they really will be able to learn to read or to significantly improve their reading allows students to release anger at all the wasted years, at the school systems and teachers that failed to teach them as children. It is important for them to experience, to express, and finally, to let go of their anger and bitterness.

5) After a month or more of classes, there may come a short period when a few students who arrived with some reading, have trouble with their old style of sight reading-guessing while struggling to acquire the additional tool of phonetic decoding. Some anxiety may ensue, and it will help if they know that very soon they will be able to put together all components of reading.

6) Success in class spreads to a feeling of confidence in other areas of life, occasionally leading to behavior demonstrating poor judgement. It can provide an opportunity for learning assertiveness and evaluating consequences.

7) Reading improvement may bring shifts in relationships outside the classroom. Students may show more self-confidence, make more demands, or need additional support for the effort they are making. A spouse who is no longer needed to provide all the reading and writing may feel threatened. Parent/child and employer/employee relationships may shift as well. These changes in relationships will mean a certain amount of stress for the students and their families, even if the changes are experienced as positive.

8) At the end of the remediation, and in spite of increased self confidence, most students still feel a fear of using their skills "in public". For some, their perception of themselves as readers does not keep pace with their actual ability. For others, it is a fear that under time pressure, or if they are being observed, their new abilities will disappear and they will once again face humiliation. We found that a transition program where students can practice and extend their reading, writing, and speaking skills in a small group, makes a big difference in solidifying their confidence and their concept of themselves as readers. This may be added as soon as it would be beneficial.

Psychological Tests

Three objective psychological tests were administered to 15 students in the first year of the program: the Depression Adjective Check List, the IPAT Anxiety Scale, and the Gordon Personal Profile Inventory (self-esteem). Of the 6 students having scores outside the norm in any of the 3 qualities, 5 were re-tested two and one half years later, at the conclusion of the project; one had dropped out because of personal problems.

Results and Discussion of Psychological Tests

There are problems inherent in giving psychological tests to reading disabled adults. (1) The primary problem, of course, is inability to read the test questions. (2) The presence of the test administrator. (3) Limited vocabularies. (4) Any assessment which uses two negative concepts in one sentence can be extremely hard for the LD adult to understand..."It is false that I cannot understand this." (5) And finally, many LD adults are concrete thinkers, unused to abstract concepts presented in sophisticated language.

We adapted the testing to these difficulties in the following ways: The subjects' inability to read test questions was solved by reading them aloud to students, making sure they understood what was being asked. We attempted to minimize the effect of assessor administration of the tests by beginning the testing after students had acquired some trust in program staff and ease in the learning situation, and by assurances that the testing had no bearing on students being in the program or on their reading remediation. The problems of test vocabulary being unfamiliar to the LD adults, and difficulty in the handling of double negatives were mitigated to a considerable degree by the assessor's defining the terms and changing double negative concepts to positive ones.

Self Esteem

Self esteem was the quality in which the largest number of mediocre to low scores was obtained. While only three students scored low enough to be considered by this measure to be outside the norm, a full two thirds scored at the 50th percentile and below. Of the three students with low self esteem scores, one dropped out, and the other two, when retested, were still within the very low self esteem range.

Anxiety

Only one student's initial scores indicated that he was "relaxed" and "secure". The majority...12...scored within the normal range. Two were highly anxious; these two were also depressed and/or had low self esteem. One of them was the student who dropped out of the program; the other's anxiety score had dropped to within the normal range upon retest.

Depression

One third of the population obtained high scores on this quality. Of this group, all but one continued to show high depression upon retest.

Evidence of significant improvement in these qualities was not reflected in the post psychological test scores of four fifths of the students who scored outside the norms in the initial testing. There are several possible reasons for this result: 1) The individuals who had scores extreme enough to be considered by the tests to have real problems in the three areas, were not significantly helped with their emotional problems by the remediation alone...they needed further psychological assistance to do that. Knowing the students, it seems likely that this is the main reason. 2) There may be a lag between achieving reading skill and the change of one's self concept into that of being a reader, and with it, the accompanying self esteem. 3) The pre and post scores were similar but possibly for different reasons. Initial anxiety may be related to fear of exposure and humiliation; perhaps after remediation it may shift toward worries about expanded opportunities creating additional responsibilities. 4) The tests selected may not have been suitable for the Project READ population, and/or the changes made in their administration altered their results. Although in some instances, teacher and counselor observations and student behavior was at variance with test results, in general the students whom we knew to be depressed, registered as depressed on the tests; the relaxed, laid-back students had low anxiety scores; the students who generally seemed to feel good about themselves, had high self esteem scores, and those who seemed to have poor self esteem, got low scores on the test.

Three instances where there appears to be a notable discrepancy between test results and behavior:

> One student who had gone from job to job, even avoiding a promotion, to protect himself from being exposed as an illiterate, came to Project READ as one of our most upset and

angry students. The pretest showed him falling within the normal range in self esteem, anxiety, and depression.

Another student, whose pretest, we felt, registered a false high depression score because of physical fatigue, had a retest which showed no depression. At the time period of the retest, he was reported by his wife and by the teacher to be depressed and upset, and to be making increased reading errors. The wife and teacher attributed it to his recognizing for the first time, the vast difference between himself and his wife who was an academically gifted professional.

S., a retest subject, made significant gains in his life: he obtained his first permanent full-time employment, was given increasing responsibilities because of his hard work and a new willingness to speak up for himself on the job. He also publicly admitted his speech and learning disability, and he became less impulsive in his daily life. Post test scores showed no significant changes in the 3 qualities being tested.

Because of the limited population and the difficulties with the tests, firm conclusions are not really warranted. However, these tests gave some support for our impressions that problems with anxiety, depression, and low self esteem may be common in many adults who have a learning disability. While less than half of the students initially scored outside the norms of the tests, indicating serious problems in the quality tested, one third of the population had high depression scores, one third had borderline or low self esteem, and almost half were at or above the 60th percentile in anxiety.

We found that the intake interview and the teacher and counselor observations were more fine tuned to the individual student and the manner in which he or she was responding both to the effects of the reading problem and to the process of remediation, than was the psychological testing.

PART V CASE STUDIES

CASE STUDY

Sub-group: Self Taught Learners

This subgroup describes five individuals who became marginal readers through their own efforts. All of them were mature adults, ages 39 to 67, four men and one woman. These adults arrived at PR quite frustrated, and three were clearly angry. There was considerable emotional display from this group throughout the program; it ranged from anger directed at the educational systems, occasionally even the PR staff, to self deprecation, to depression. All had strong opinions on schools, work, government, and society...opinions they offered freely. Frequently, they expressed disgust with the language itself. The two who were less obviously angry, made their feelings known though a sometimes distracting use of humor. The attendance of all five was, however, excellent.

The men sought reading and writing help at this time because they feared lay-offs at work due to a down-turn in the local blue-collar job climate. These men had gotten "good" at job-hopping to avoid exposure of their reading and writing difficulties. Several had even rejected promotions because of this fear. Though they were marginal readers, they had steadfastly refused to read in any situation where they would have had to respond to what was read in the presence of others. All of these readers had stable family lives, and for all but the woman, both spouses and children knew of their difficulties. Three, possibly four, of them had at least one child with learning disability.

Assessment

On intake batteries combined reading grades for the group ranged from 4.8 to 6.2. Comprehension on a silent reading measure, untimed, ranged from grade 6 to 9. Two of these adults had been referred from other adult reading programs. Interestingly they came in with strong opinions about what kind of help they needed, and had not received. All of them said writing was their greatest problem, and it was. They claimed to have no knowledge of how letters and sounds went together. This lack of knowledge about sounds of letter combinations, phonics, was born out in assessment. For each of them this was the lowest individual score in the reading and writing battery; phonics grade scores averaged 2.5, ranging for individuals from 1 to 3.9. They said they had gotten where they were simply by trying and giving up and then trying again, spurred by something they needed to understand. Indeed, their capacity for understanding was a major factor in enabling these bright adults to teach themselves. However, each had reached a level of reading at which he or she was plainly stranded. This level was surely not commensurate with intellectual potential.

These adults had in common the capacity to teach themselves, and the need and drive to do so. However, they had been constantly frustrated by their language difficulties. During initial contact with PR they frequently complained of "lousy" memories, when, in fact, their reading levels demonstrated remarkable feats of memory. They had memorized a considerable number of sight words. Their memory was aided by the ability to use words in context to deduce meaning, and thus to guess at additional words. All of them employed these powers of memory and deductive reasoning to propel their reading up to where it was when they entered PR. Though all were excellent abstract thinkers, not one had been able to sort out the linguistic patterns of English, even when assisted by a literate spouse or tutor. As one student explained, words that have not been memorized are "Pictures I don't know instead of pictures I know." Similarly, words that can be read in a context are sometimes baffling when seen in isolation. They often had difficulty on tasks that required them to distinguish real words from nonsense syllables.

Writing, as previously suggested, was particularly frustrating for self taught reading disabled students. Though they came in stating that this was what they wanted, this was also what they had fearfully avoided attempting on their own. They had little or no framework for spelling because they were able to master neither the phonology nor the spelling structure of the language they were struggling to "conquer". Their speech, their flow of ideas was rich, but it came down on paper in short impoverished sentences. The following examples had been corrected for spelling by students before being placed into student folders: "My first job I ran a cment mixer. Then a steel cutter asmbler and now a welder." "I hadaboringday." "Could you ues sume of this stuf? Things DiD'nt work out with we meeting." "He fale in a Roet and stab his foit."

One student explained it thus, "You feel you have so many good thoughts and ideas; it's like an ocean, but they are all behind a dam with only the tiniest hole for them to get out."

In the writing of a particular word, some or all of the letters might be present, but their order might also appear random: for example, "student" might be spelled "studnet" or "studun". Furthermore when asked to form a word by completing a phoneme (e.g. cla-), they might offer several combinations of letters, such as clab, clal, clam, and clat, - unable to determine, which, if any, are real words. This is in spite of the fact that some of the words they produced were words they read easily in context. Teachers commented that it was sometimes harder to teach spelling to and to encourage writing from these adults than it was from students whose reading and writing proceed apace. Entry spelling scores for this group ranged from grade level 2.8 to 5.5.

Surprisingly, these bright adults occasionally had difficulty with reading comprehension, particularly main ideas and inferences. It can be speculated that because their learning was done without the discussions and exchanges usually associated with group learning, their responses might sometimes be idiosyncratic. This showed up more in class activity than on assessments.

Remediation

Every member of the self taught made meaningful gains in reading. In an average of approximately 175 one hour lessons they gained an average of 2.9 years in word attack skill, and 4 to 5 years in comprehension, on standardized tests. These gains were quite evenly distributed among the group when adjusted for exact number of lessons per individual. Spelling gain as measured by standardized grade level tests was less dramatic than reading. Spelling gains for the five ranged from two to three grade levels. For none of them did it become automatic or easily accomplished; the woman demonstrated the most gain here. However, all acquired the skills necessary to produce a piece of correctly spelled written work. Two of the men went on to complete high school competency diplomas, a third enrolled in and passed the basic composition course at a local college.

The RFS approach in reading was tailor made for these students; it taught in a structured sequential way those elements needed to make their reading whole. The knowledge they now have of phonics and word structure provides a reliable base for continued growth in reading comprehension.

Though RFS is purposely designed to minimize the interference of context clues in the acquisition of phonics, some modification of the materials is still necessary with these students to avoid the interference of their sight vocabularies. The daily reading of nonsense syllables that follow phonetic rules works well. RFS provides some; the excellent resource book, Solving Remedial Language Difficulties. Educator's Publishing Service, provides more, as does The Wilson Reading System. Nonsense syllables are also easily "dashed off" by an aide or teacher. Ten or more of these should be included for each phonic pattern. They may also be dictated to intensify the integration of the patterns they represent. Materials focusing on word and language structure may be added to those already in the curriculum. Prefixes, suffixes, roots and syllabication techniques, as well as parts of speech must be stressed. There are several areas of difficulty these students have in common that can be attacked through extensive writing. These include: handwriting, attending to word endings; the meaning and use of possessives; meaning and use of punctuation. Constant, daily writing has other obvious benefits. Slowly, but surely, it breaks down the barrier, erected to protect the individual from facing his or her own inadequacy. It also, of course, reinforces spelling and, sentence structure, and the effective organization of one's thoughts. The value of content over mechanics must actually be taught for some of these people.

Writing may begin in a non-threatening way with dictation. Once they are even minimally comfortable with it, their own writing may be encouraged.

Spelling will always be something of a problem; how much of a problem depends upon the attitudes toward spelling developed by the students and teachers together. It was observed with this group that they had variable degrees of generalizing phonic spelling patterns and rules to their own writing. Writers with learning disability can edit their work be calling on phonic knowledge, spelling rule, sight memory, and dictionary use. Spelling will also improve with practice. Perfection on the first try is not important; control over the process and over one's attitude is. This was well illustrated in the experience of one of these adults who spent several hours with the dictionary correcting the spelling on an essay to be submitted for the adult high school diploma. The public school teacher assigned to evaluate the essay, praised its content, but sent it back suggesting that there were a few spelling errors that might have been avoided had he used a dictionary to check his work. That the student was able to responded to this suggestion with a burst of laughter was as much a measure of achievement as was the passing of the essay. Finally, the ownership of inexpensive electronic spelling checkers that can be carried in one's pocket or of home computers with spelling checking software is strongly recommended for these students.

CASE STUDY

Sub-group: Slow Processors of Language

Although adults with reading difficulty, especially those who exhibit symptoms of dyslexia or learning disability, would be expected to read or write slowly, the syndrome described here exceeded that expectation. The three PR individuals identified in this group process written language at a pace that appears neurologically fixed. Whether it was reading or writing, performance was deliberate, measured, mechanical..and very slow.

This pace seemed unrelated to intelligence, and clearly did not indicate inability to accomplish the learning task. Despite meaningful gain, despite an increased rate of learning for these adults, the pace of performance changed little from the beginning to the end of their time with PR. Oral reading, silent reading, spelling exercises or their own writing, and for two of the three, speaking remained atypically slow.

Assessment

The three adults in this group spanned the entry reading levels and I.Q. levels of PR. One was a non-reader, one functionally illiterate and one a marginal reader. On the intelligence continuum, one would be classified a slow learner, one absolute average, the third, bright average. If learning disability and pace must be considered factors of general intelligence, rather than factors effecting score on current IQ tests, then the tests measure them accurately. If not then the tests underestimate them. PR staff subscribes to the latter view. The brightest of the three has two honor student daughters, one of whom had a pace problem similar to the father's, but without the other learning difficulties. This PR student was seen by learning center staff not as LD, but as needing practice building his vocabulary. When this effort frustrated both them and him, he was referred on to PR.

A second was referred on to PR, because it was thought he might be mildly retarded; he scored absolute average on the WAIS during the PR intake assessment even though he had a number of depressed subscores, typical of LD individuals.

The third student was more of a puzzle. WAIS activities requiring sequencing...arranging story cards in order, recall of series of numbers in order...really threw him off, and consequently his standardized IQ score was even more affected than were the scores of the other two students in this group. Yet, though he had serious diabetes and a chronic spinal disc problem, he with his wife supported a large family. He had a wonderful sense of humor and a constant sparkle in his eye.

Remediation

Questions about his remediation intelligence evaporated the day he arrived at class in a "new" truck he had built from two old trucks. The question became how to demonstrate progress while adjusting to his pace. He aided this adjustment by reminding his teacher that, "It doesn´t do me no good if you give the answer before I do." He had had the experience of this type of well-intended help in a previous adult class in another state, and was not willing to accept it again.

For these adults, not only were the physical behaviors of reading and writing slow, but so too was the mental retrieval necessary to initiate these behaviors. Thus there was a lag in the recall of words and ideas, which occurred both as a response to a specific question and to the task of speaking or writing one´s own words. It was clearly different in quality from the difficulty with getting started that most people experience from time to time. It was constant and of-a-piece with the observable slow physical performance. Similarly, in social conversation with teachers or other students, give and take might be warm and humorous, but nonetheless, it was slow and measured. Only if the student himself initiated the topic of conversation, did the variety of responses and the pace pick up. One student, particularly, seemed almost unable to respond to what others said; he regularly interrupted others to turn the conversation to his own interests.

Though these students covered measurably less material in a given time period than other PR students, this was not a factor in the quality of their work. They held on to what they had learned particularly well, and were able to use it. For example, when the marginal reader originally enrolled at the learning center he took an extraordinary amount of time...two and a half hours...with a silent reading assessment. He did not complete the assessment in this time, (way beyond what the test protocol allows), but did score close to 9th grade. Two years later, he took the same extraordinary amount of time with an assessment for entry into an adult competency based diploma program, but completed it with a score of 95%.

As stated above, staff observed that the pace of learning of each of these students did indeed increase. Test results were mixed. On post assessments of timed oral reading this group averaged only a 1/2 half year gain, which represents approximately 38% of the average gain for the rest of the RFS group. They gained .1, .2, 1.2 grade levels respectively. The gains in oral reading which was untimed were notably larger for two, averaging 3 years. The third, with the lowest scoreable IQ made little oral reading accuracy gain. He did; however, gain over two years in oral comprehension. As a group they achieved 91% of the oral comprehension gain of the other students. It must be said here, as a reminder, that standardized tests do not tell the full story. Even the lowest level reader, was reading materials in class such as an elementary school version of the life of John Kennedy. At home he began reading family financial papers, and attempting articles that interested him in his wife's "Ladies" magazines. The student who had entered as functionally illiterate, over the second summer read the Steven King novel, Pet Semetary.

To their credit when the slow processors are in a pressure free environment, they exhibit no distress at taking so long to perform language tasks; they seem hardly aware of the time. If pressed to operate more quickly, however, they slow down further, or in some cases, excuse themselves from the task completely. The adult classroom must be such a pressure free environment if they are to work well in it.

This type of learner may be misdiagnosed more easily than others, as "slow", meaning retarded. This is because it truly may be difficult for teachers or even counselors to recognize this pace difference in initial contacts; awareness of it comes as the student is observed and worked with. Intake people should look for accomplishments in other areas of life, such as family, work, hobbies, before any judgement is even considered about an adult's intellectual capacity.

The slow paced student may be particularly trying for a teacher whose mind processes information rapidly or one who speaks rapidly or who usually presents a lot of information in a short time. Thus adjustments must be made by the teacher in her own performance should she elect to instruct these students.

Structured curricula work very well for teaching them the basics of language, as they are already methodical. Instructors can prepare students to take in material by giving an overview of the lesson as it is presented, so there is a frame of reference ready to aid in information processing. The teacher should speak slowly, allowing silence between information inputs, and ample time for student responses of any type. As much verbal back and forth as is possible is excellent. The information and ideas presented in any lesson, must be elicited from the student in a variety of forms as part of that same lesson. They should not, however, be asked to memorize. They usually can memorize anything they wish at their own pace; it should just be allowed to happen. The pressure of being asked to tackle even sight words, at least initially, may slow an already laggard performance. In oral reading, students may be encouraged to run their fingers or their pencils along the line or beneath the word as they read. Simultaneous oral reading...teacher and student together...may be used if it is introduced as a reading aid early on in the teaching relationship. It does not appear as successful if introduced once the teacher/student pattern has been established.

If a particular learning task requires the students' own initiation, they can be somewhat speeded up in its execution by being helped to organize the task. They can be taught to focus on critical elements. For instance, in writing about a trip to N.Y., one student was asked to tell the teacher three different things about the trip. These were then put on paper by the teacher in the form of a few clue words which could be used as aids in stimulating the retrieval of supporting information. The same kind of activity, will also help increase pace for getting essential meaning out of something read. Focusing on the central elements of the task is certainly necessary in the workplace, especially if the task includes any reading or writing.

One teacher likened the teaching of slower paced adults to an increasingly fine game of catch between two people who get "terrific" at anticipating each other. Indeed, it was felt by all staff that the flow of energy between student and teacher was particularly critical with these students.

CASE STUDY

Sub-group: Adults With The Least Readiness For Learning

Though the adults in this group differ from each other in a number of ways, they share major characteristics:

1. Regardless of individual intelligence, which in fact ranged from the lowest to the highest in PR, these adults had the lowest level of academic readiness for the learning tasks. During their school years they had received a minimal amount of instruction in reading or writing...virtually none.

2. As a group they had a number of notable perceptual and/or health problems.

Seven of the original 25 accepted for PR, two of whom eventually dropped out, were in this group. All seven were at least sixteen when they left school; two were high school graduates. Four of the group had independently sought help with reading during their adult years. These private efforts were not successful. While it is true that many reading disabled adults claim, and justifiably so, that the schools failed them, these cases represent an extreme.

Certainly it is impossible at this time to determine how these students might have been perceived as youngsters by their public school teachers. Even now as mature adults they have a variety of individual difficulties that complicate assessment. Yet in the words of one PR teacher, "They were just enough off center as kids to essentially be kicked aside by the system."

The two youngest members were placed in special education classes, defined as having a "mild mental handicap" and as "retarded-educable" and, according to their own testimony, not given language instruction.

They may have been attended to in other ways, however,. One was given speech therapy, the other practical living training. The four older adults of this group...those now in their mid forties or more...and one younger man who was in a parochial school, were given useful tasks to perform around the school, often working with the school custodian. A real benefit of this was that their manual skills were fostered, effectively preparing them to earn a reliable living. All have mechanical, carpentry or farming skills, for which they are respected by their spouses and children. Indeed, all but one of the full group of seven are exceptionally hard workers, making up with hands and back for what they have been unable to do with written language. However, the younger members do not demonstrate the self esteem evident among the older four.

Interestingly, most of the adults in this group, seemed to PR staff to be more matter of fact and less angry about their reading difficulties than other PR students. Nevertheless, they were keenly aware of the limits they faced as non readers, and truly hopeful that they could now learn.

As previously stated, a number of perceptual problems were also present. These included visual and auditory discrimination problems and speech problems: demonstrated by mispronunciation of multi-syllabic words; extreme difficulty discriminating between words that are visually similar. This last might occur even when the meaning was clear to the reader; flat-fault.

The large concentration of health problems present among these students included: migraine, diabetes, allergies, back problems, ear infections, and vision problems for which glasses were worn.

Assessments

The lowest as well as the highest intelligence test scores were recorded within this group, from low to bright average. Two scored in the low average range: (90-110 = average, 80-89 - low average). The brightest students in this group had several subtest scores demonstrating superior ability in areas of non-verbal reasoning. One 50 yr. old, who on the WAIS showed a performance IQ of 128, was used during his school years as a teacher of welding skills for other students, in spite of the fact that he could not read a single word. For years after he had left the high school, as a graduate, he was called upon by the school to help out with trade school students. What they felt he had to offer was, "skill and an unusual kindness". This man was forced by escalating health problems to leave PR after 125+ lessons, spread over a year and a half.

On entry reading assessments, the average scores were not only lower than those of other students as a group, but individual profiles were flatter. The average entry score for five tests was 2.0. The average range of scores among tests was 1.9. Three of the brighter students accounted for most of this range, by achieving higher scores on oral reading comprehension tests, in which the questions are read to them.

Further analysis of this group shows various and sometimes contradictory factors.

- Every member of the group had at least one sibling who has significant reading/writing difficulties. The five who are parents all have one or more children with language difficulty. They also have children without language difficulty.
- The largest fluctuations in attendance occurred within this group. They had the poorest average attendance, the most sporadic attendance, and yet the individual with the highest attendance as well as the two PR students

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with the longest duration of attendance were also in the group.
- Four of these adults were observed by the teachers to lack oral language fluency. Interestingly, the remaining three were very verbal, yet all but one, were noticeably concrete in their choice of topics, and in words to represent them.

Remediation

More time was required initially to prepare these students for the program, and the rate of progress was slower for all, irrespective of which teaching group they were placed in. Most of this group seemed to have great gaps in their store of information which certainly limited their readiness for new learning. Some had difficulty learning to express ideas in sequence, and all had difficulty in writing down even their own words in a structured form. They initially were laborious decoders or spellers-aloud of unknown words. As a group they exhibited LD language errors in greater degree and for longer duration than other PR students. Visual discrimination and auditory discrimination skills developed quite slowly. They were excessive in their confusion of b/d and m/n. The letters l and r were added to words and perseverated from word to word. They continued to mispronounce the consonants and consonant combinations such as s/sh, th/v, v/f. More than other students they tended to forget material from day to day, were poorest at generalizing from task to task or task to real world. They had most difficulty using prediction or even guessing to assist the reading. The least amount of outside reading was done by this group.

Nonetheless, all of these adults made gains, even the two that dropped out. They made gains in their personal lives as well as in reading and writing. Certainly their pace of learning increased markedly. As a group they made an average reading comprehension gain ranging from 1 to 3 years. The largest gain was not made by the brightest member.

The younger members showed marked gain in employment stability and in self esteem. They became able to speak up for themselves on the job and in personal relationships. Mature judgement did not always accompany their new found voices, however,. Five of the original seven have been matched with trained volunteer tutors to continue the learning. At the time of this writing, one year after PR terminated, four are working regularly with these tutors.

Meaningful progress with this type of students is predicated upon regular attendance over a long period of time. They must understand its utter necessity, the purpose of the structure provided and the degree of commitment asked of them. They must be enabled to be partners in the learning.

For effective instruction of adults with a variety difficulties it is critical that materials be adjusted and added to fit individual needs, while still following the sequence of a structured curriculum.

It is equally important that the student be provided with every opportunity to develop comprehension strategies to assist the decoding. This would begin with exercises in oral language, stressing the expression of ideas and the development of speaking vocabulary. Exercises in connected reading, matching what is being taught must be included as early as they are able to handle it.

Much practice is needed in writing, including handwriting, which can be begun with copying exercises. In class multi-sensory approaches are important. Teaching in small steps, repeating ideas and material, developing conversations to stimulate oral language, journal keeping and simultaneous oral reading for some sight word teaching, are all valuable. Finally, reading outside of class should be encouraged, though not required. Homework in which students can practice what is learned with minimum opportunity for error is beneficial.

CASE STUDY

Sub-group: Adults Over Sixty Years of Age

Two men and one woman entered PR at age 67, following recent retirement from satisfying long term blue collar careers. Three more gregarious people would be hard to find. They were deeply involved in a variety of family, community, social and political activities. Long, good lives had developed in them an obvious self confidence, and continued zest for living. Yet for years each had hidden serious language difficulty from everyone, except spouses, and to some degree even from themselves. Two believed that their children were still unaware that they had any "problem". These now adult children included tradespeople, a musician, a teacher and a doctor of psychology. The two men used their wives as intermediaries when reading or writing were necessary. Not surprisingly it was the wives that escorted them to the initial PR interviews. All three adults said they viewed the reading as something it was now time to acquire, or now time to improve. It would be an enrichment to retirement years, allow them to "write better letters...read more to grandchildren...read about things that interested them...run for local office". One had even enrolled in a reading class for adults some months before he applied to PR. Nonetheless, there was obvious ambivalence within these three successful retirees about now facing a deficiency so long ignored. Though this ambivalence lessened with time, it did from time to time interfere with learning progress.

The older students became particular favorites of the staff, because of their genuine interest in the individual teacher's lives, families and personalities. The interest in others extended to fellow students, where it was expressed as concern for the life difficulties the younger people faced.

Assessment

I.Q. assessments confirmed what their lives had demonstrated, that these adults were truly bright. For two of them the performance scores were higher than the verbal, for the third the verbal was higher.

The three entered the program at different reading levels. The woman was marginally literate; she managed to get information that she wanted from newspapers and magazines. She was not always sure she had the correct information, but she got by. One man came in reading between third and fourth grade, and the other between fourth and fifth. Because the men had relied upon wives for information that required reading, they had not been forced to make the same effort as the woman. Yet, both said that the reading they did have, they gained pretty much on their own. The woman, and the man reading between fourth and fifth grade were placed in RFS, the other man in the traditional curriculum. This decision was based on desire to have one older person in each teaching group, and on the geographic residence of each student.

Remediation

Several factors made these students somewhat different to work with than younger students. Physical problems, vision and hearing loss, arthritic stiffness, were easily enough accommodated. Somewhat more challenging were differences in attitude. As stated above, there was personal risk at again being in a classroom. PR staff came to see the ambivalence as balancing the long desired acquisition of reading against the fear of making it so important that it cast a shadow over earlier accomplishments. For two of the students, long repressed pain over how they had had to live did indeed surface. It took the form of anger toward the past, which to their credit and growth they shared with teachers. These were the same two that believed their children did not know of their difficulties.

Because they had learned on their own over many years, and perhaps simply because they were older, it was more difficult for them to adapt to new methods of learning. Initially, they were the most enthusiastic of the students, thinking time and attendance would solve their reading problems. It was as though they expected to collect and insert into their reading vocabularies words they did not currently have. It took time and work for them to come to understand WHAT they had not learned, and HOW they would learn now! They really had to be taught to see reading as an interactive process to be developed for the rest of their lives and not as simply a word bank.

Some weeks after the initial enthusiasm, discouragement seemed to set in. They were rediscovering that this kind of learning was difficult for them, that the struggle may have been delayed, but could not be removed. Fortunately all were mature people, able to laugh at themselves, and this along with strong personal motivation assured their success. They led the teachers in zeroing in on what would be important to them at this stage in life. All of the curriculum was covered, but reading was the central focus for them.

They were quite able to learn and use the new ways of approaching reading in the structured situation, but more than younger students they reverted to old habits when reading material over a sentence in length or when writing. They might spell out the letters of unknown words, revert quickly to guessing, skip over things, start joking with the teacher. Interestingly, they might try to memorize things in isolation that would be more effectively recalled through association and practiced use. They would understand a phonic principle, but then want to sight read as many words as possible from a list presented to reinforce the phonic pattern. When they slowed down and attended to the patterns, they found, sometimes to their surprise, that they could read the words successfully without having memorized them. It was necessary to learn to use association and practice and accept less than perfection. Sometimes they responded to the teachers in parental, chiding ways. Humor was often used to deflect the discomfort of not doing something as well as they wished. One man reminded teachers more than once, "Well I can't be perfect or you will be out of a job". When from time to time they realized that they were reading successfully in a new way, their delight was evident. Indeed, achievement was what sustained their motivation. Staff heard from wives about increased willingness to read in the outside world. The sixty year old wife of one student enrolled in a registered nursing program. He walked down the hall of her college with her, reading the subject names on the doors: "anatomy"..."biology"...She was as thrilled as he.

Writing was more difficult for the men due to stiffness in their hands, thus less of it was done. They also did less well than the woman in increasing spelling skill, but they did become willing to write. One spent days perfecting a letter to his congressman, and was elated at the response to his ideas.

The maturity of these students was apparent as they accepted the fact that they did not have to become perfect in holding on to all material taught in order to make significant use of it. This was reflected in their improvement. The woman left after the first year, 70 lessons, for reasons of health. In this time she gained three years in reading comprehension. The man in RFS gained just under 2 years in word attack skill, and 5 years in reading comprehension.

The third man who was in the traditional curriculum, had the highest IQ, but probably a greater degree of disability. He gained less than the others. He made a one year gain in word attack, a two year gain in oral reading accuracy and a one and a half year gain in comprehension.

When working with the older student, we recommend that teachers just go ahead and teach as they would for any other student. As the basic work is covered, the teacher can adapt the materials to respond to the older student's interests and goals in returning to the classroom. It takes a strong personality to return to school to improve basic skills at the age when most are happy to rest on their laurels. It is the sense of self that will guide both teachers and students in making physical accommodations and in dealing effectively with adjustments in attitude toward learning, should they be necessary.

CASE STUDY

Individual: "B" The Classic Dyslexic

The following case closely fits the text book description of a dyslexic.

B. came to PR directly from a factory meeting where he had been made foreman in spite of the fact that he was functionally illiterate. He said he had a dyslexic son and suspected he was the same. His increased opportunity at work combined with his son's need for his support convinced B. that he must continue his own education. The reasons for B.'s success at work were apparent at his first PR interview; he was open, direct, intelligent and determined. He said the trust placed in him at work enabled him to admit his reading problem; furthermore he promised his son that he would never have to feel the shame in public school so vivid in B's own memory. B. had compensated for his school failures by developing his talent for drawing. He now designs and builds furniture for his home. When B. returned to work following the interview, he announced to his supervisor that he would have a high school diploma in three years. He set himself a real challenge.

Assessment

B.'s entry assessment was a typical example of language performance described in the literature as strongly suggesting learning disability. There was a significant discrepancy between his oral reading and his oral comprehension, or listening comprehension. He had no idea of the sound symbol relationship of letters, reversed letters in any writing sample, inverted small words, added, omitted or altered the placement of (r)s and (l)s, carried the visual/sound pattern of a given word into the word directly below or next to it (perseveration), ignored or added endings and functors. He answered oral reading comprehension questions by using the information provided by the question itself.

Pre and Post Standardized Grade Level Scores

Number of lessons in Reading From Scratch - 151

"B"	Pre Test	Post Test
Oral Paragraphs accuracy (timed)	1.8	2.7
Oral Paragraphs accuracy (untimed)	3.4	9.8
Oral Paragraphs comprehension (untimed)	6.7	12.9
Single Word Reading	3.6	9

Word Attack (phonics)	1.6	8.1
Spelling	-	5

B. was given a 5th grade vocabulary level silent reading assessment following 25 lessons. He scored a 5.7.

B's intelligence assessment demonstrated superiority in social intelligence, the ability to comprehend logically and in sequence the behavior of people. He also scored above average in the grasp of whole-part relationships, practical judgement and reasoning. He was below average in areas calling upon short term memory for numbers, in manipulation of numbers without benefit of paper and pen, and in remembering and transcribing coded symbols. An additional assessment confirmed difficulty with short term visual memory, even for meaningful material. His short term visual memory was low average.

Remediation

B. worked diligently on all areas of the curriculum. The initial work with phonics was very difficult for him. It was several months before he could adequately discriminate among short vowel sounds. Particularly troublesome were the sounds of short (i) and (e). Once this area of the curriculum was under his control, B. moved quite smoothly through the materials, going from step to step with increasing speed and proficiency. Sometimes when a new concept was introduced he did temporarily regress. For a short time he would excessively add or omit (r)s and (l)s, perseverate, etc. These behaviors faded from the oral reading for the most part as the new material was learned. However, if B. was particularly fatigued these omissions and confusions might re-appear. This holds true for many learning disabled readers, but does not seem to impact significantly upon silent reading comprehension once the reading skills are secure.

B. became particularly able at calling out the appropriate spelling rule when he made an error in dictated sentences. In spite of short term memory difficulty, he was able to hold onto and use phonetic patterns, spelling rules, new vocabulary, rules of grammar and punctuation. These things became meaningful to him because of their importance in his life. He began to pride himself on being able to catch himself making structural errors, which he would then correct by rule or sound. He was particularly interested in all words new to his vocabulary. He developed skill in the use of a dictionary to clarify meanings, and he enjoyed debating the specific meanings of words with teachers and fellow students.

As he became increasingly automatic in decoding he was able to develop his use of context and prediction to guide the reading.

It is particularly interesting how B. rapidly focused on the task, even though he initially found it such a struggle. He later explained this was because he could see right away that it made sense. At the same time he became vigilant about his son's progress. On several occasions he confronted teachers and principal about what he felt were violations of the educational plan the school had designed for his son.

Upon completion of the curriculum materials, B. took the language assessments for entry into the competency based adult diploma. He passed the reading, but, was about one grade low in written language skills. He was not ready to take any math assessment, but began working on a review of basic math with self-programmed material, which he could now read. He scored high enough on general knowledge to be exempt from all subject area reading requirements. However, this assessment took him three to four times as long as it takes the usual applicant to the program. In considering this, teachers believe that several factors may have contributed: The fact that he was a truly new reader unpracticed in the art of reading rapidly for specific content; certainly he was unfamiliar with the type of response called for by an author´s written comprehension questions; he may be a slower processor of language. It is not possible to definitively determine which combination of factors were operating, but surely B´s uncommon determination to excel was a major contributor to the score he obtained on this assessment.

In order to further develop B´s writing skills, PR teachers elected to bypass review of PR in favor of tutoring him with the language materials of the diploma curriculum. This worked extremely well; B. proved the most able of all the PR students to recall phonetic principles, and language rules, to guide his writing. Like other students, however, B. will continue to have difficulty with spelling, and will always need to supplement his memory and use of rules with the dictionary. In fact, he purchased a pocket spelling computer before he completed the program.

B. further demonstrated his progress by agreeing to speak at a literacy conference held at Westfield State College. He brought his son and wife with him and discussed openly his own experiences and successes.

B. increased his silent reading comprehension by about 6 grade levels. He expects to complete the high school work within his three year plan.

CASE STUDY

Individual: "H" Multiple Severe Language Problems

The following case is that of an adult with multiple language problems and modest intelligence, for whom RFS was not appropriate as the central curriculum. This was because RFS moves at a pace somewhat beyond what this man could initially accommodate. RFS was used as a supplement. The language difficulties of this man were typical of those found in many learning disabled readers, what was unique was their range and especially their severity in one individual.

H. 45 years old and essentially unable to read at all was brought to PR by a friend. H. has both an illiterate brother and a son with severe learning problems. Though he was in an ungraded special education classroom setting from 2nd grade until high school, H. was given little academic instruction. However, during this time, he borrowed a book from a classmate and taught himself basic math. At age 16 he left school. Some years later he enrolled in an adult reading class which lasted six months before funding was terminated.

H. has been a fork lift operator for a local factory for 16 years. Other areas of work have included construction, food service, and roofing. His self taught skills in math enable him to perform the arithmetic calculations necessary for various construction and roofing jobs.

A special trait of H's is his concern for others. He assists at functions for retarded children and to raise money for the homeless. He is always cheerful, and appears genuinely comfortable with himself in spite of his illiteracy. His attendance in PR was excellent.

Assessment

H's entry assessments confirmed that he had the most minimal skills in all areas of language. It is significant in light of his reading, writing, and speaking performance that on an auditory discrimination test he scored poorly.

H. received 342 lessons in a combination of, "Let's Read", a modified "Orton Gillingham", and "Reading from Scratch".

Pre and Post Assessment Grade Level Scores

"H"	Pre Test	Post Test
Oral Paragraphs accuracy (timed)	1	1.7
Oral Paragraphs accuracy (untimed)	1	1.5
Oral Paragraphs Comprehension (untimed)	1	1.5
Single Word Reading	1.3	2.8
Word Attack (phonics)	1	3

On the Wechsler Adult Intelligence Scale H performed in the low normal range; he would be classified as a slow learner. His language difficulties surely effect his performance on the verbal portion of the test. Here he scores 83, low normal. Normal is 90-100, 79 is borderline. His performance score falls into the normal range, 93. It strengthened by his ability to perceive and analyze form, and understand whole-part relationships. His score on general comprehension which represents practical, day-to-day logic, falls between 8 and 9, just below the lower border of absolute average. average for a WAIS subscore is 9-10. H. reported that he spends much of his "T.V." time watching educational T.V.

Many conversations with H. were initiated by information he brought in from watching programs on geography or history. This tells something about him that timed and structured tests cannot measure. But, the test and direct teacher experiences with H. do demonstrate that much of the information that so interested him he was unable to reconstruct into thought or language patterns that would enable verbal communication equal to his probable understanding of the subject.

Over the course of teaching H. for three years, staff came to appreciate the extent of his disability. He taught teachers as much as they taught him. The following summarizes language difficulties exhibited by H.

Auditory Discrimination: Much of his pronunciation only approximated the correct English word. In speech he often failed to discriminate one sound from a similar one.

Auditory Perception: Many sounds, particularly those in the middle of words were simply not perceived.

Speech Problems: He had difficulty articulating particular sounds, such as 'th', "m", "n". Often teachers had to demonstrate how to arrange lips and tongue to produce the correct sound.

Sequencing: Initially H. had little ability to sequence when talking about his own activities or interests. He would clearly know how to do something, but could not describe it in a series of steps. Nor did his ideas progress in an orderly fashion. They seemed to shoot off in unexpected directions so that it was hard for him to pursue a subject.

Memory for Languages: Cue words were assigned to each letter of the alphabet to enable H. to capture the sound of the letter. It took him much time to remember even imperfectly these cues.

Difficulty Translating Written Symbol to Sound and Sound Back to Symbol: Remembering the sounds associated with letters and then blending them into words often took four or more mental and auditory steps before the word was arrived at. Belt might be: bill-bit-let-elt-belt. This peculiar decoding made spelling more difficult yet. It might be slightly off, thus for belt; blet; or result in a totally different word. Once when the word "shot" was dictated he wrote "bang".

Substitutions: Frequently in reading he would substitute a synonym for the correct word. "Twelve" would become "noon", or "cracked" would become "broken". Occasionally he produced an antonym; thus, for "please" he read "thanks". Functors and other non-imageable words were also often misread.

Perseveration: H. had great difficulty letting go of sounds as he went from one word to the next. If a word had an "sh", all subsequent "s" sounds were read as "sh".

Difficulty with Multisylabic Words: Often such words had to be written out in separate syllables, so that none were omitted. Writing out the syllables had the added benefit of helping his speech.

Inability to Differentiate Between Words and Non-words: This occurred in his own writing and in closure exercises.

Difficulty Generalizing to Outside Reading: H. had particular difficulty transferring the skills he began to demonstrate with a teacher at his side to reading on his own. By the end of the 3rd year he was making some effort in this direction.

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Remediation

As the teachers came to appreciate the extent of H's difficulties, the slowness of his progress became more understandable.

H. was initially placed in the RFS equipment group. However, the RFS materials needed the addition of many supplemental materials for one so unprepared for learning and so disabled as H. The minimal number of supplemental materials written to accommodate other students was not sufficient for H. His own very limited sight vocabulary was used to write materials to supplement reading and writing activities. Though it was advised by the author of RFS, Dorothy van den Honert, that the addition of auditory and visual equipment to the basic instruction, would not help H. as it would other adults, teachers continued to use it. The reasoning was that it might aid in bolstering auditory discrimination. In year two a combination of the visually oriented curriculum, "Let's Read" was combined with exercises from "Orton Gillingham". This combination offered sound/symbol exercises as well as sentences and paragraphs for oral reading.

H. Had progressed up through Let's Read book six when the program ended. He was also reading with a teacher a biography of J.F.K. written at 3 to 4th grade level. A PR teacher continued to work with H. twice a week for a year on a volunteer basis and H. Himself located two additional adults willing to continue working with him on his reading.

H. is an individual who will never be adequately measured by standardized tests. Though this is true for many learning disabled, H. represents the extreme. How far he can come in reading will depend upon the quality and consistency of individualized teaching available to him, as well as his ability to persist. Certainly he will never do well on tests. He will always add extra letters sounds to what he reads, will continue to drop whole syllables in pronouncing words he understands, and will forever substitute one word for another. This is of importance only to the degree that it diminishes his ability to get meaning from what he wants to read. Indeed, this is the only value; that H., whose determination was stunning and sometimes heartrending, continue to experience growth in his understanding of the printed page.

H. was probably performing around third grade when the PR program ended: the additional tutoring hopefully carried him further. He can read road signs, some words in newspapers, and has taken over the family checkbook. He has immensely improved his ability to communicate clearly, and can now explain something of interest in a fairly sequential way without getting lost or losing his listener.

The current tasks of H. and his tutors are to increase sight word vocabulary for specific use, and to practice what he uses in class at every opportunity outside of class. This may require some structured homework exercises, but he should be ready to take this step toward independence. He must also be encouraged to translate the oral language skills he has acquired into tools of reason and prediction that will combine with decoding skills to help him increase, and thus use, comprehension as a reading aid.

CASE STUDY

Individual: "G" High School Graduate, Former Special Education Student

G, a 26 year old bachelor with a two year old son, came to PR during a break from his seasonal job with a local construction company. He said it was his lucky day to "show up just when a special reading program was getting under way"; furthermore, he wanted to be "tested" immediately so that he could see how much he remembered from his days in special education. G. was a vocational high school graduate, who had learned very little, because, he explained, it had been easier to be the class wiseguy. His mother and brother shared his learning problems, and for this reason his mother had been adamant that the school provide G. with special reading help. She had also paid for tutoring after he completed high school. The tutor was used to help him prepare for an oral driver's test, which he passed easily.

During the PR interview, G. explained that his abilities to learn from listening and to talk to anybody without telling much about himself, enabled him to "get along" in the world. He had a good work reputation based on an enthusiastic attitude and well developed manual skills.

Assessment

Though G. was eager for the assessment; he was also highly anxious. The careful preparation for these initial assessments, which stress their use as teaching aids, not tools of judgement, seemed lost on him. He freely described the severity of his language problems, and then seemed determined to prove his words untrue. That G. had gotten some attention in special education was obvious both in his word attack score, and in his effort to talk his way through the assessment.

Pre and Post Assessment Grade Level Scores

Number of lessons in RFS - 235, spread over 26 months.

G. as noted below, did not take the timed oral reading post test; he simply did not want to take it and was not pressured to. On the single word reading post test, he stopped responding after the first error, so it cannot be demonstrated whether his full score would have been higher than recorded or not; though it is likely that it would.

"G"	Pre Test	Post Test
Oral paragraphs accuracy (timed)	2	-
Oral paragraph accuracy (untimed)	4.5	5.7

Oral paragraph comprehension (untimed)	5.2	9.2
Single word reading	3.7	5.5
Word attack (phonics)	4.4	7

G. was also not administered the IQ assessment. His intelligence was surely not in question and it was felt that he should not take it unless he volunteered to. He'd had to sit through too many of "these" in public school.

G. was given a silent reading test after 100 lessons, he scored 5.7, his post test score, given when the program terminated, was 8.2. He had not completed the curriculum, because of the pace of his performance and his sporadic attendance.

Remediation

In the class situation, G. quickly established friendships with all the teachers and other students; those who were paired with him, and those who walked through the room during class sessions. There was not a person in the project that failed to respond to him. He really reached out to fellow students. Through caring disguised as humor he enabled others to be more self-accepting. He told an older man whose eyesight was deteriorating, "Don't worry, I'm ahead of you in this stuff. I'll be ready to teach you Braille". At the same time he was controlled and self-protective. It took him a long time to trust teachers with his home phone number.

Though G. received a significant number of lessons, his sporadic attendance pattern certainly affected his progress. His job was also a factor. PR staff are not sure what additional factors may have been operating. He often arrived at class 10 or more minutes late.

G. seemed to have no particular difficulty with the material. In the academic sense he responded well to the structure. His difficulty was in attending to the work, as he was highly distractible. G. performed best in a one-to-one setting with the teacher. Independent work was hard for him to concentrate on, and he accomplished less of it than other students. He was quite adept at distracting fellow students and teachers from their own work. Much staff time was spent in considering ways to increase his focus. An increasing amount of connected reading was used with G. to sustain his motivation and to help him transfer skills. If the material interested him he did fairly well. Ideally material somewhat below his reading level should have been used. His astute awareness of the levels of reading selections, and his resistance to anything he thought might be beneath him made this tricky to implement.

Though G. was clearly bright his vocabulary was somewhat limited, nor did he show the interest of other PR students in increasing it. New words, a challenge to so many of them were a chore to him.

Though he did not complete the materials, G. did accomplish enough to allow him to read newspapers and magazine articles that interested him, and to travel, feeling secure in his ability to read signs and maps.

He also expressed interest in continuing to work with PR teachers. For career purposes, PR staff matched G. with a tutor who could help him prepare for the Hydraulics license. He expects to take this examination in written form. The tutor has reported that G. has been showing up for their sessions regularly and on time.

* Postscript - Sept. '89 - G. visited his PR teachers to announce that he had just passed the written exam for the Hydraulics license.

CASE STUDY

Individual: "M" A Self-taught, Marginal Reader

M., a 40 year old married father of four, came to PR with the hope of improving his reading and to learn to write. He was tall, model handsome, humorous and highly anxious. At the time he worked for a local industry and knew that his job could be at risk with impending layoffs. Though he was determined to try "school" again, the emotional stress of entering a "school building" was such that he felt compelled to take the day following the initial interview off from work. He attributes this to his experience in public school, which had been so negative that he had accepted a year in a reform school for truancy as preferable to the "daily humiliation of not being able to learn". M claimed he left school unable to read at all. However, when he entered PR he was able to comprehend written material at a 7th to 8th grade level, depending on the print format, the absence of pressure and ample time. He reported that he had gotten to this level by teaching himself to read over ten "long" years. A night job held during those years had allowed him free time to pour over newspapers with the aid of a dictionary. He listened to radio and T.V. and tried to read about things of which he had some knowledge. He also had been assisted by his wife, whom he considered his best friend. M would copy words down, then ask her how to pronounce them and what they meant. In this way he had developed a sizeable word bank, and honed his reasoning skills..."But now", he said, "I can't seem to get any farther. So, ok, I can get by with what I can do in reading, but I have to learn to spell. I need to be able to write". His fear of writing was extreme; he refused, he said, to even try to leave a note to his wife on the refrigerator.

M. had held a number of blue collar jobs throughout his adolescent and adult years. He had left several when it had been discovered he could not read. In those that involved skill such as furniture making, he had become so good at the work that his reading, once discovered, had not mattered.

Assessment

M's entry performance was typical of the marginal readers who were accepted to the program. He combined visual and vocabulary memory with context clues to make intelligent guesses about the meaning of the text. He had an up and down test profile which clearly defined the strengths and weaknesses of his written language performance.

Pre and Post Standardized Grade Level Scores

"M"	Pre Test	Post Test
Oral paragraphs accuracy (timed)	4.3	7.6
Oral paragraphs accuracy (untimed)	7.2	12.2
Oral paragraphs comprehension (untimed)	7.0	12.0
Single word reading	6	8.5
Word attack (phonics)	3.5	5.3
Spelling	2.8	5.7

M's intelligence assessment showed him to be superior in abstract reasoning, general comprehension, and social comprehension/logic; bright normal in vocabulary; below average in manipulation of numbers without benefit of paper and pencil, and in visual to motor manipulation of both objects and written symbols. M was one two PR students who had a stronger verbal IQ score than he did a performance IQ score. In discussing his performance, M. commented that he could comprehend blueprints well if he could focus visually on a small area. But, he added that he could be easily distracted by what lay outside the area on which he wanted to work. If this happened he would have to turn away physically to break the image, and then turn back to narrow his perception.

The following is an initial writing sample from dictated sentences:

The cham saaT an The BoTTM
of the oscin. Th[illegible]re rush into
The code. in The neck of Time.

__Remediation:__

Though M was most interested in learning to spell and thus to write, he willingly worked on the two skills of reading and spelling together. He quickly understood how interdependent they were. He was the most advanced of PR students in his ability to learn and use the phonetic system of the language. We assume this is a direct result of his own work with the dictionary. Because he had a fairly large word bank, it was helpful to teach him phonic principals using nonsense words as well as syllabication strategies. M complained frequently about the English language, about the need for so much detail that he did not think he would remember; yet he had the best attendance in the project. He also developed a strong bond with his class partner, a very bright man who was functionally illiterate.

M. did well in learning and applying the rules of English spelling in controlled situations...that is, situations which focused on a single rule or phonic pattern, situations that blocked out for him the distractions of other patterns. He had more difficulty than other students, who could not read as well as he initially, in integrating and thus using the rules or phonetic principles in his own or in dictated writing. It is, of course, true that for most language disabled writers, applying rules and phonic patterns in their own writing remains a life long difficulty. Teachers considered that the manner in which M. had learned to read accounted for some, but not all, of this. He had developed a system for reading that took little notice of the principles of the language...as was demonstrated by his entry score in phonics. Spelling in English was nearly as foreign to him as would be spelling in French. M. did try to rely on what he heard; he tried to write by sounds and clues from the consonant letters. Thus, longer words with consonant skeletons were sometimes easier for him to put down in some recognizable form, than shorter vowel dominated words; "simle, opin, lafth, compiteson, whit," In addition, his visual-to-motor performance was poor. On occasion he misspelled his own name.

In spite of these exacerbating problems, M. became PR's best writer. He is a natural story teller. Staff chided him about denying them the delight of his anecdotes and stories because of spelling. Once he became convinced that what he had to say was more powerful than his spelling errors, he began to write.

M. provided a real learning opportunity for the staff. It was soon obvious that his effort to spell correctly while he was writing interfered with the creative process. He simply could not do the two things at the same time; he had to finish the entire work before he attended to spelling. It was suggested that he "tell" his story into a tape recorder, then deal with the spelling as he transcribed his words. This might reduce his frustration, but he was unwilling to do this. He needed to "see" as well as "hear" what he wrote.

Though he greatly increased the number of words he could spell correctly, he never became automatic enough to feel very good about his writing. Yet his output increased and his fluency improved measurably. He and the teachers developed a strategy, which worked for M. He could write all his ideas down as they flowed, then would correct as much as possible recalling rules and phonetic patterns. Finally he would go to the dictionary. It cannot be said that this system ever satisfied him, but it enabled him to write, and most importantly to know he could control the final product. The words in the dedication of this manuscript are his. M. increased his reading comprehension by approximately five grade levels and continued on to complete a high school competency based diploma.

PART VI CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The direct teaching of phonics and language structure in a controlled, sequential format is more effective for LD adult readers, than is teaching in which the inclusion of phonics instruction as well as the method of its presentation are at the discretion of the teacher.

For the marginal adult reader...one who enters with silent reading comprehension, untimed, of at least seventh grade...who is learning disabled, the teaching of phonics, language structure and rules, is sufficient for significant and fairly rapid improvement in reading. This student is able to generalize what is learned. Writing does not progress at the same pace.

For the functionally illiterate 'classic' dyslexic...one who is clearly bright but exhibits most all the descriptors of learning disability...the teaching of phonics, language structure and rules is sufficient for significant accomplishment in reading. This student also will transfer what is learned to reading now initiated outside the classroom. Writing proceeds at a noticeably slower pace, and the pace varies considerably among individuals.

For the functionally illiterate who exhibits a greater variety of learning disability/perceptual difficulty and may be of more average or even low average intelligence, instruction must be broadened. Direct teaching of comprehension skills and sight word recognition must proceed apace with phonics and language instruction.

* We are not suggesting that teachers not use connected readings or comprehension activities and discussions in all their classrooms; indeed, we strongly recommend their use. We have simply demonstrated that for two of the groups described above, the reading will leap whether the comprehension component is thus attended to or not. As already stated in the discussion of statistical results, PR readers became automatic enough in the use of phonological and word structure clues to free them to attend to the more sophisticated elements of comprehension.

ASSESSMENT RECOMMENDATIONS

Because the purpose of assessment is to guide the learning process, a thorough evaluation is crucial for all adults entering or even considering a reading program. This is so whatever the performance, whether or not a reading disability is suspected. The question of whether or not an adult is learning disabled is difficult to answer in absolute clinical terms. However, an assessment that considers the learner's current strengths and weaknesses and details of the reading performance, together with past educational experiences will provide the most likely opportunity for clarifying this question. In addition, it will produce the information necessary to fine-tune selected curricula to the specific needs of the student.

A well done assessment informs the potential student as well as the teacher. It provides the data with which the program can measure its own success, and also becomes the vehicle through which the student invests himself in the reading program. The adult learner must be an equal partner in the remediation process and it is in the assessment that this message is conveyed. Assessment should build from the student's goals and expectations. It unfolds as a dialogue between counselor or teacher and the student through observation, interview, tests, test analyses, discussion and planning. It should be an ongoing process that concludes only when the student has completed his study.

The structure for assessment will vary from program to program because of time, space, and staffing, but the process should not be compromised. Ideally students are thoroughly assessed before being placed in any learning situation, particularly if a learning disability is known or suspected. This may not always be the case, however; a student may be in a class situation before it becomes obvious that there is a learning problem.

In evaluating adults who may have learning problems, the assessor should expect, and be prepared to handle with sensitivity, emotional or even defensive behavior in the testing situation. She should also be watching for marked discrepancies in performance from test to test. As the operating definition of learning disability suggests, a serious disparity between an individual's years in school, obviously normal intelligence and level of reading skill should send up a warning flag. PR staff are convinced that it is highly unlikely that an individual who has had even six years of elementary school would have failed to learn to read beyond the level of functional literacy, unless he had suffered extreme personal or educational deprivation, was emotionally ill, or had sensory or intellectual impairment. Most of us...normal, bright, less bright...pick up reading any way we are given it. We may be better or poorer readers based on how well we were instructed and how much we have added on our own, but we are neither illiterate nor stranded at a low level of reading. Level of reading should be a reasonable reflection of intellective potential. The current literature states that a capacity-achievement difference of three years or more for a high school age student would define that student as a disabled reader recommended for special reading instruction. The same reasoning must hold for adult readers.

The following components of assessment may all be used to sort out the puzzle pieces of potential, performance, and past experience. Each step of the assessment should lead comfortably into the next; the full plan for the assessment should be agreed upon, and if feasible, scheduled during the first visit.

Intake

Much may be gleaned about potential learning difficulties through informed and sensitive observation by intake staff, whether they be receptionists, aides, teachers etc. This is so whether the individual has clearly come for reading help, to enroll in a G.E.D. program or is vague about his objectives. Initial observation may take place on the telephone or right at the front desk. Very often, though not always, the adult who may know or suspect he has a learning problem will not volunteer this information on first contact. Experience has taught him to be self protective. Yet clues are many and may include: discomfort in the presence of more than one person; an exhibited or openly expressed fear that "testing" will be required on a first visit; an avoidance of filling out forms; an attempt to feel out staff attitudes; concerns about class size, how much writing will be required, reading aloud, privacy and so on. In the case of the student already in a class situation, the teacher becomes aware that something is not right in the learning process. A person who appears normally bright seems: unable to focus on tasks, painfully slow to make progress, to function at an uneven pace, easily distracted or frustrated, disorganized in his approach, critical of teacher and materials, increasingly sporadic in attendance. Correspondingly, specific academic behavior evident in the class environment and possibly during intake, when language tasks are called for, can provide further clues. These may include: bizarre spelling, overly phonetic spelling; labored almost mechanical reading and writing; inability to read aloud without dropping or altering endings, skipping or adding small words, substituting one functor for another; no idea of how to approach unfamiliar words, excessive guessing at words or whole phrases when reading.

In Depth Interview

The interview will have two objectives: the exchange of information and the building of trust. The interview format used by PR is intended as a guide for obtaining important information, not as a questionnaire. (Please see Appendix D) The specific questions relating to individual and family health are included because dyslexia is thought to show some correlation with these conditions. A higher than chance percentage of these conditions did show up among students and student families in the PR population. This certainly does not mean that there is any causative factor between the conditions and learning disability/dyslexia. If the information can be obtained comfortably, it is good data for adult educators to compile. Questions about discomfort in bright light; the onset of fatigue, blurring and/or moving letters associated with reading, are related to possible light sensitivity syndrome.

Whether or not the student comes in with printed academic records, the educational experiences recorded in his memory are a source of valuable information. Sensitively phrased questions can draw out these experiences in a manner that may be both cathartic and encouraging to the individual. As the interview progresses, the interviewer moves back from the student's stated goal through the steps necessary to achieve it. It is in this part of an interview that the counselor can get the first clear information to be used in forming an appropriate learning plan. Information may include: degree of educational exposure, past learning and coping strategies, learning strengths, how learning difficulty was handled, pockets of knowledge the individual may have. As past education is discussed, strong, probably painful feelings may surface. Should this be the case, the counselor does well to keep in mind that remediation will be the best therapy and all information gained and emotion generated should be focused toward that end. It is an opportune time to assure the adult that there are valid reasons for lack of success in learning to read. Then may follow a brief, but clear explanation that reading difficulties often represent different ways of processing written language, and thus call for specific instructional strategies. Learning disabilities may be discussed here, if it seems appropriate. There is no blame!

Throughout the interview the counselor is a caring, non-judgemental, yet reflective listener. Details are sought about family, work, personal interests and schedules. The counselor needs to discover any practical, health, emotional, or family obstacles to pursuing a learning plan. Relevant family information such as attitudes toward learning, family attitude toward the student, and educational achievement or difficulty among various family members, may provide valuable insights about the student. Finally, the individual must be carefully informed of the time, energy, and commitment the teachers will expect of him. This interview may take up to an hour, but if it is done well, the potential student is ready, often eager for the results of formal assessment. He now sees the testing as the first step in long desired education, and it is.

Formal Testing

Types and uses of assessment will be described below. (For specific test recommendations, please see Appendix A). How valid any one measure...norms and validity tables notwithstanding...is for an adult whose experiences are many and unique and spread over many years as compared to its validity for a school child is a continuing question. Therefore, when looking for possible learning disabilities it is wise to use a variety of instruments. It is equally important to use less formal, but replicable, measures for observing and monitoring student performance. These may be designed by experienced staff or may be replicated from materials available from within the field.

The purpose of a reading/writing assessment is to determine, 1. The level of performance in relation to the person's potential, 2. The reasons for the level of performance.

Intelligence

An evaluation of general intelligence is the logical first step.

Ideally, professionally trained examiners would administer individual IQ tests. The value of these is that they provide a profile of components of general intelligence, rather than relying on a simple number score, as do many of the more available and easily administered tests. An absolute score has very questionable validity for an individual who has not been able to gather, through reading, the type of information asked for on these orally administered tests. (Please see Performance on IQ Tests, pg. 39). The patterns of an individual profile on the Wechsler Adult Intelligence Scale, WAIS, provide excellent information about possible learning disability to the qualified observer. Unfortunately this type of test is both costly and time consuming; further, only trained personnel may administer it. Moreover, the administrator must understand something about learning disability to effectively interpret and use the test to benefit the LD adult.

Unless such services are available to the learning program, a clinical assessment of intelligence is not obtainable. However, the type of information being sought...solid reasoning and comprehension capacity, evidence of meaningful life accomplishments...can be obtained in other, effective if less precise, ways. The observer is looking for evidence of strengths that are not consistent with the level of academic achievement demonstrated, but may be consistent with uneven capacity in cognitive processing. Clues from the interview will be the quality, availability and organization of the student's thoughts, and his ability to express them, the range of his interests, and of his curiosity. Allowance must be made, of course for the stress the adult may feel at again being in a "school" environment.

An excellent method for zeroing in on comprehension potential is the administration of a listening comprehension test, which demonstrates the level of material an individual could understand if he could read the materials himself. The tester reads a series of graded passages to the student, beginning with the easiest. Questions follow each passage and this procedure continues until the student's frustration level has been reached. Passages may come from standardized oral or silent reading tests, from program-created informal reading inventories (IRIs), or from published IRIs. What is being evaluated is possible discrepancy between this comprehension level and that obtained on oral or silent reading tests. It is important to note what type of question causes difficulty. Those calling for literal recall, measure not only comprehension, but also short term memory...another area of difficulty for many learning disabled individuals. To minimize the possible effect of short term memory, or anxiety, on a comprehension task, a paragraph or entire passage may be re-read if this is agreed upon by student and assessor beforehand.

Reading Assessments

A variety of formal tests may be used to profile a student's reading performance. Less formal measures may also be used, as long as they are proven reliable and provide a base from which to measure gain. The purpose of the profile, which is to guide the learning plan, should dictate the selection, use, and interpretation of any measures used. PR staff believes that as long as the test-post test schedule is consistent, the individual ways in which a program employs the tests is a matter for its own determination. If the program has research or funding reporting obligations, then standardized tests may be necessary. An assessment structure that will realistically measure adult student gain and at the same time satisfy valid evaluation requirements, should be in place before contacts are made with funding sources.

Oral Reading

Oral passages provide the best way to ascertain which types of reading errors the individual is making.

These are graded passages, followed by comprehension questions read aloud by the tester. Passages are not re-read. It is a good idea to time the performance in order to obtain information about the pace of reading. Some tests, compute time into the score. PR staff advises getting both a timed and an untimed score on the same passage if possible. Often for a reader suspected of having dyslexia/learning disability, it is useful to begin the reading well below the level at which the test protocol suggests starting. This may demonstrate error patterns typical of this type reader even on material well within their comprehension level. Look for skipped, altered, or added endings and functors. Note pronunciation of all vowels; in particular, are there short vowel confusions? Note peculiar substitutions; the correct reading of a word on one page, the incorrect reading on a subsequent page. Are there peculiar omissions or additions to the text?

A large issue in the administration of these tests is whether to supply words the reader cannot pronounce; attitudes on this vary. Certainly critical words supplied by the tester will impact comprehension. Contrary to some test protocols, PR staff advises supplying words only if it appears the particular word will not alter the outcome significantly. PR staff also advise not being as rigid as test protocol requests about the amount of time needed for "figuring-out" a word. Similarly PR staff note excessive repetitions, but do not score them.

The objective is to see what an adult who has been struggling on her own with reading can do, as well as what she cannot do. Comprehension questions should be carefully attended to. A bright adult may be able to answer the question from combining the information provided by the question itself, with his own reasoning capacity. It should be noted if this is happening, and the tester should be asking himself what is being measured here.

Silent Reading Comprehension

Silent reading is the best overall measure of an individual's reading level. Both the quality and the time of response to comprehension questions are important. For many students, particularly those whose reading performance is at the low end of the scale, standardized silent reading tests designed for adults are not very useful, and they are too often, stress provoking. They only show what is already known, that the person is not performing at the adult level. However, out-of-level testing can identify a base from which quantifiable reading gain may later be measured and it may also provide additional information about the adult's reasoning ability. An out-of-level test is one which is at the level at of the person's current performance. Based on results of the oral test, or a word recognition test, or the entry test from an adult silent reading measure, the student is given a silent reading test at his estimated grade level. He may score quite above his oral accuracy level on this test, demonstrating that he can effectively deal with ideas if they are presented at a low reading level. Post-testing may be on the same grade level test or on a higher grade level test. Difference in pre and post scores record the amount of gain. At the completion of the program, or sometime during the program when it becomes less threatening, he may be measured on an adult level reading assessment.

Timing the test provides the adult student with information from which he may judge the performance he can expect of himself in real world situations. Thus, though many tests have rigid time constraints, the score should be calculated both timed and untimed. The student should be allowed to continue working as long as he feels able to continue.

Word Recognition

These tests measure the ability to read orally words in isolation...lists of words of graduated difficulty, without the benefit of context. The tester should be alert for the types of errors that the student may have made in the oral passages. Additionally, he should note the way in which the student approaches unknown words. Does he attempt to spell them aloud to get a handle on them? Does he have any sense of phonetic decoding? What about prefixes, suffixes, and word structure? Is there random guessing?

Word Attack

This is a measure of phonic knowledge using nonsense syllables that depend upon knowledge of the sound/symbol principles of English for accurate decoding. Learning disabled readers as a rule have great difficulty with phonics, unless they have been specifically instructed. Here attention should be paid to the degree to which the adult regularizes nonsense syllables into real words. Even though they have been clearly told that the groups of letters before them are not words, the tendency to make familiar words out of them may be strong. Also note the pronunciation of short vowels, long vowels, vowel diagraphs consonant blends, and how the letters, (r), (l), and (n) are handled.

Spelling-Writing Samples

Written language calls for the accurate use of spelling, punctuation, capitalization, and syntax to express ideas. The measure for an adult here is whether he can combine any or all of these skills in his own writing. Can he write the alphabet; can he spell common sight words consistently; can he write a meaningful sentence? What types of errors does he make in his own writing as compared to dictated writing or dictated single words? Is his spelling largely phonetic? Does he know when he is making errors? Does he demonstrate the same types of errors he made in reading assessments? Does he reverse or transpose letters, does he omit letters or syllables or endings?

The above information may be obtained from voluntary writing samples, dictated writing tasks, and performance on traditional spelling lists.

Perception - Memory

The question of the degree to which perceptual difficulties interfere with the acquisition of reading, has been debated for a long time without resolution. Current thinking seems to be that only severe problems with auditory or visual discrimination, or auditory or visual memory would provide serious barriers to learning. Severe difficulty in auditory discrimination can be fairly obvious. Difficulties in the pronunciation of multisylabic words, or the skipping of letters or entire syllables in words the student uses in his own conversation should certainly be noted. (hand-"han") (intelligent-"telligent",) Can the individual count the number of syllables in a word? Listen for the dropping of endings, the confusion in speech of m/n, v/th, f/th, d/t. He may also fail to discriminate these similar sounds when he hears them.

When writing does the person confuse letters, such as m with w, or p with q? Does he reverse numbers, occasionally invert words, was-saw? It should also be observed whether words which are visually similar cause problems in writing and in reading, (clots, colts, clods). Can he match and/or copy visually identical or visually similar symbols and objects? When reading does he pull peripheral words or letters into the word or phrase he is tracking?

Short term or working memory is where visual or auditory information is stored until it can be associated with something already known and then transferred to long term or permanent memory. Long term memory is the repository from which one pulls stored information with which to associate and interpret the visual information on the printed page. It has long been considered that reading difficulty may have some base in short term memory processing; though, its degree of significance is questioned. Developmental reading delay has been associated with maturational delay in this cognitive area in children. For some adults slow memory reaction time when they were school children may possibly have been a causative factor leading to their current reading dilemma. The difficulty itself may still be present; it may not. More importantly, the effects of its presence now and/or earlier in life must be coped with by the reading disabled adult in the present.

There are screening devices to aid in identifying those individuals who have significant problems in these areas of perception and memory. More usefully, the degree of difficulty an individual appears to have with either type of perception provides clues that will aid the teacher in fine-tuning the curricula to best develop the student's phonological understanding.

Oral Language Fluency

Lack of oral language fluency may manifest itself in intellectually normal adults in several ways. These may include, in ascending order: difficulty in understanding or responding to words - (receptive language); difficulty or slowness in naming objects, or retrieving words or ideas one wishes to express - (expressive language); difficulty in understanding verbal relationships, jokes, analogies, generalizations - (integrative language). There may also be differing causes for these problems. An individual may have suffered economic or cultural deprivation. He may have had hearing or speech difficulty during important developmental years. He may also have auditory discrimination, auditory sequencing, and/or word retrieval problems that are the direct result of specific cognitive processing disorders. Whatever the underlying cause, lack of oral fluency can delay the acquisition of reading skill, even for adults who are mature and serious about learning.

In conversing with the adult note whether he is fluent and sequential in describing his own work or interests. Is he less fluent if asked for an opinion on an ordinary topic...hair cuts, taxes... that he did not initiate? Can he repeat back information you have provided about the program to which his own motivation has brought him? Can he tell you the meaning of words he has used in his own conversation? Note the pace of his responses, the sentence structure he uses, the variety in his choice of words and ideas. Is the conversation literal, abstract; does he use humor; can he respond to your humor? Can he make you understand his ideas even if he cannot express it in a precise organized manner?

Summary Statement

The order and extent of testing must be determined by individual programs or counselors. Its extent will be influenced by information obtained in the interview and the initial tests. PR staff prefer to begin with oral paragraph reading simply because it gives the tester/observer so many clues to what additional assessments may highlight, and which areas may need to be evaluated in more depth.

Once assessment is completed, the resulting information must be carefully analyzed and interpreted by counselors and teachers. It is then discussed with student, along with a suggested learning plan. This plan is finalized with the goals of the student in mind, and with his full agreement.

The clearest confirmation of reading disability/dyslexia is the case in which the individual shows strengths in reasoning and specific weaknesses in several areas of processing and performance. This is most likely the case with the marginally reading learning disabled/dyslexic adult who has had some post public school instruction, formal or informal, and with the minimally reading classic dyslexic who has had no appropriate instruction. Both these individuals will make many of the language processing errors described in the preceding assessment discussion. Sometimes the diagnosis is not as clear with the lowest level reader, who has a flatter profile, who scores 0-2 on all or most tests. In this case the presence of learning disability may not be clearly isolated from other difficulties until the individual has been observed over time in the learning situation. The above procedure; however, will enable the assessor to gather evidence that suggests whether or not a learning disability is likely, what the learning strengths and weaknesses are, and to organize a learning plan based upon that evidence.

Fortunately, a clinically perfect understanding of the nature, degree and range of the disability is not necessary in order to help the LD adult learn to read.

INSTRUCTIONAL RECOMMENDATIONS

How reading is defined has much to do with the instructional model used by the person doing the defining. Yet however one defines it, there are components that must be present in the process for it to be successful. The reader must be familiar with, must recognize, the symbols on the page and their associated sounds. Furthermore, he must be able to interpret the relationship of these symbols to each other, their relationship to the structure of the language, and finally to information he already has in order to come up with meaning. The process of reading can be inhibited by weakness in any of these areas.

For the learning disabled adult it is the interpretation of the relationship of the symbols to each other that is often the major weaknesses. He may recognize the individual letters and may know some or most of their sounds in isolation. Additionally, he may recognize certain clusters of letters as representing more than their individual sounds, as representing units of meaning...words. The weakness is that he perceives the units of meaning as pictures for which he has an association. He has memorized letters and he has memorized the appearance of various words; only what he has memorized, can he recall. There is little awareness of letters, visual symbol and associated sound, as having meaning within the word/picture. The perception of letters and sounds is simply not integrated into the perception of words. He has a primary difficulty in linking these mental activities into a linguistic process that first, allows him to adequately code the word, to record its place in the sentence, and at almost the same time to scan his knowledge bank to complete the interpretation of its meaning in this particular context.

The adults with reading disability who are not totally illiterate, operate from a base of memorized sight words, to which they add intelligent guessing. This combination enables them to respond to additional clues such as initial consonants and sentence structure to make some sense of what is before them. The completely illiterate adult with a learning disability, has simply not acquired enough sight words to initiate this process.

Because of failure to grasp and use the sound-symbol relationships of the language, the learning disabled reader, until he is properly taught, is limited by the size of his memory. The new reader, child or adult, who is not learning disabled, even if not directly taught it, can deduce the language sound symbol structure for his own use. He can store it to be called upon when he is confronted with symbols upon a page. He does not need to know perfectly all the patterns...the blueprint. He has generalized from specific instances. The learning disabled or dyslexic reader does not do this. Problem readers of PR, almost without exception, made this "complaint" from the start. It is important to stress that they were not paroting what they heard in school; they were relating their own puzzling and, yes, humiliating experiences..."Ma, don´t you know there is no /h/ sound in the word flapping?"... Certainly, most LD learners can become competent readers, but they will not become competent without proper instruction. LD individuals who have been taught effectively as children develop reading ability commensurate with their intellectual potential. For the LD adult who has not had proper instruction, early exposure to language, native intelligence, degree of disability and family stability are determinants that mark a place on a continuum from illiteracy to marginal literacy.

It is not necessary to pinpoint exactly where on the continuum from illiteracy to marginal literacy the individual is in order to begin useful instruction. Curricula that provide training in sound/symbol relationships in a structured way are a proper base for all adult students with learning disability. They are also most appropriate for the non learning disabled illiterate or beginning reader. The latter will pass through them fairly quickly with an excellent base for reading growth and for good spelling.

The experience of PR staff as well as a survey of the literature suggests critical components necessary to the success of curricula for learning disabled readers.

1. Transmit to the new student the idea of what written language really is: oral language transcribed into clusters of visual symbols which are arranged in a meaningful structure that calls forth additional meaning from the reader. It is a way of "freezing" experience so that it may be shared. Print has become the most sophisticated form of language. Instill a curiosity about the English language, what it is made up of, how it evolved.

2. Teach in small sequential steps, starting from the beginning basic sound/symbol patterns. Micro-units.

3. Instruct in a spiral format, move constantly forward, but always circle around to learned material: teach-go forward-review-teach.

4. Provide overlearning; teach to the point of automaticity. For many learning disabled, some of what is taught will not be retained. However, through repetition and use, a significant portion will, enough to provide a sustaining substructure for continued reading growth.

5. A multifaceted, multi-sensory approach is important. Come at one concept in various ways: connected reading, spelling, writing, discussion, workbook exercises, language dictations, and so on.

6. Elicit correct responses from students from "Day One". Provide them not with the answers, but with the tools.

7. Teach in different contexts to promote generalization: basic academics, life coping skills, reading and writing for work or other personal interests.

RECOMMENDED CURRICULA

The materials we recommend are faithful to the steps described above. Individuals progressing through them, each at his own pace, receive a thorough grounding in the language structure of English, and develop strong comprehension skills.

The two which have been the materials of PR are: Reading From Scratch-Dorothy van den Honert, Educators Publishing Service, Cambridge, Massachusetts, Let's Read, Leonard Bloomfield, Clarence Barnhart, Barnhart Press, New York, New York.

All students were taught with RFS. Let's Read was used as a supplement with LD adults whose total score was between first and second grade on the reading battery, and who had severe auditory discrimination problems. It's initial pace is slower, emphasis is on visual patterning, with many copying exercises to increase visual recognition. It also provides much practice with short-vowel sounds.

Following the description of these curricula, are our suggestions as to how they are best used and supplemented. Other curricula which we recommend, including several just field tested and published, are presented in Appendix B - Curriculum Bibliography/Descriptions.

Reading From Scratch

RFS is a multi-sensory curriculum based on a synthetic phonics approach. It was designed with the learning disabled or dyslexic individual in mind, though it is equally effective for the non learning disabled. van den Honert worked for seven years as a teacher of learning disabled adolescents in a public school. These materials are the outgrowth of that experience combined with graduate study in the fields of special education and neurology. Her work has been published in "Journal of Learning Disabilities".

The components of the curriculum include: RFS Teachers Manual - the author's description of learning disability, her views on successfully instructing LD individuals, structured start-up lessons. A flow chart is included to guide the integrated use of the various curriculum components. A sequence for the oral presentation of rules of grammar is described in the flow chart.

RFS Phonics - 157 pages of word lists and sentences, with enough material that overteaching is accomplished inconspicuously. All necessary phonics facts and English spelling patterns are covered in the pages of this book. The phonics are embedded in specially constructed exercises that stress serial order. It begins with two-letter short-vowel phonemes and progresses through all the vowel and consonant patterns of the language, ending with pairs of vowels with separate sounds and common irregular discrimination, and extra exercises that attack common reversals.

RFS Spelling - exercises matched to the phonics. It contains spelling lists and sentences for dictation. Each is formed around a phonetic principle. It also presents the rules of English spelling, as well as words and sentences containing common irregular words for memorizing.

Workbook I - exercises tied to phonic and spelling activities, in order to strengthen concepts through structured practice. It stresses phonemic analysis and auditory closure, exercises in sequencing, and practice applying spelling rules.

Workbook II - grammar and language exercises

RFS begins every student at the same point, the beginning. It does not assume previous knowledge. Thus students are held responsible only for what they are taught as the program progresses. Students that have higher level skills will, of course progress through the materials more quickly than those with fewer skills. RFS will instruct them in the areas of their difficulties while at the same time reinforcing and integrating with the new material the skills they brought with them.

RFS provides the teacher a clear and effective structure which she may supplement without losing focus. For this reason it is gaining a solid reputation among teachers of adults. Because it attends to the weaknesses of most LD readers, the teacher need not spend time creating special materials to accommodate individual learning difficulties. She may instead supplement and thus reinforce the material according to the needs and interests of particular students. Teachers have commented that the structure of RFS and the design for its use allow observation of the student from a fixed point, making possible a clear understanding of strengths and weaknesses as the student progresses. The very design encourages students to question, to initiate discussion of language concepts, word meanings, the peculiarities of English punctuation and spelling.

Students respond to the materials because the structure, by first teaching what is regular and dependable in the language, provides a firm base which gives them a sense of control. As this control increases it provides a secure frame for dealing with all the irregularities of the language without undue confusion. A particular appeal of RFS is that it is written on an adult level. As his reading evolves, as he increases in automaticity and thus in comprehension the reader will rely less and less on deliberate phonetic decoding skill; however, it will always be a tool available to him should he need it. Thus there need be no ceiling for his reading potential other than those imposed by his intellect and interests.

For the dyslexic student who has been properly assessed, using stereo earphones to deliver music to one ear while the other ear receives a phonics lesson may enhance the effectiveness of RFS. This "Forced Lateralization" is designed to stimulate the language hemisphere. To employ the technique, read When Right Is Wrong, van den Honert. (Appendix B)

RFS may be taught either on a one-to one basis or in small groups. It is, however, central to the program that every student receive at least twenty minutes of individual phonics...reading and spelling...instruction from a teacher or trained teacher-aide during each lesson. Other activities may be accomplished in small groups, or individually.

Let's Read

The Let's Read series of nine books and accompanying workbooks uses a linguistic approach to teaching reading skills by organizing language components into a step-by-step progression from simple and regular spelling and phrase patterns to sophisticated and irregular spelling patterns and sentence structure. Concentrating on the alphabetic nature of the English language, *Let's Read* emphasizes the basic relationship of spelling to sound, presenting like concepts together, providing words, sentences and paragraphs for practice. It builds on previously mastered skills in a structured sequential way.

Books 1, 2, and 3 teach short vowel monosyllables with no consonant clusters: ban, bet, bid, etc. Books 4 and 5 add consonant clusters and digraphs...brat, chat, pond, etc. Book 6 begins long vowel patterns, and 7 begins irregular patterns. Book 8 introduces irregular vowel patterns, and 9, irregular consonant patterns.

Let's Read is a good introduction to the language for the totally non-reading adult, even though the materials are not adult oriented. The fact is that it gets the lowest level reader off to a solid start. It is used by a number of programs as a precursor or supplement to other materials.

SUPPLEMENTING THE CURRICULA

It is important to consider that adults who are learning to read are usually not placed in a position, as are school children, of immediately using what has been learned thus reinforcing it. Although these curricula themselves provide considerable reinforcement through the serial structure which accommodates individual pace, students benefit from supplemental activities. Such activity is best built into the class or lesson time for two reasons; For many adults time committed to the reading program must be added to family and work responsibilities. Work in the early stages of the program should be under the direct observation of a teacher to avoid reinforcing error patterns that adults may have developed. When adults have become comfortable with the structure of the program and have adjusted their personal schedules, outside work may be encouraged, though never required. Any homework should initially be of a nature that minimizes the possibility of errors.

Oral Language Development- This may start with guided discussions in which information of interest to the adults is presented, followed by informal questions to stimulate discussions. The teacher or aide may write down ideas dictated by the student. The goal is to develop conversations which develop both vocabulary and language structure. Discussion may even develop around work being accomplished in the curriculum. The language itself provides much opportunity for discussion, wonder, humor..."Why can't 'love' be 'luv' as it is in the comics?".

Writing Activity- In addition to writing which is prescribed by the program, writing that is of practical value to the student is an excellent way to generalize the learning. This may include the writing of checks, applications, notes to teachers, personal or business letters...anything relevant to the teacher and student. For the very beginning student, form letters that can be copied are useful. These may be notes to teachers, business letters and so on. The form may even be dictated by students as a group. The keeping of journals is an excellent source of pride for developing readers. It should not be looked at for error, but only for content. It encourages students to regularly express their thoughts and thus examine them. For the LD adult this particularly difficult task can truly be a vehicle for letting go of some of the fear and shame associated with written language.

Connected Reading- This is meaningful paragraph reading, separate from the curriculum, that may be used to reinforce the concepts being taught in the day's lesson, and also to strengthen comprehension skill. A variety of materials may be used. For the beginning reader, materials should be found or written that do not require the student to use skill he does not yet have. His own sight words, few as they may be, are a good base. For materials that fit this need for LD readers, see Appendix B. Connected reading serves the critical purpose for the beginning reader of encouraging comprehension skills that will soon strengthen decoding skills. For the marginal reader, connected reading is not critical to successful progress through RFS. It does, however, definitely speed up the transfer of the phonic training from the class room to reading done outside. Connected readings should be used to reinforce the phonetic patterns being studied. The student can highlight the identified patterns in the readings with colored markers.

Syllabication Training- Work in syllabication is valuable from the beginning as the student progresses from consonant-vowel-consonant pattern of the closed syllable and its short vowel sound gradually through the other 5 syllable types. Even knowing only the closed syllable helps the student break down two or three syllable words. Later on, skill in the use of syllabication strategy is invaluable in the decoding of words which are not part of his vocabulary, and for which context is not sufficient.

Sight Words- To the sight words that the student brings with him may be added common irregularly spelled words that have to be memorized. These should be introduced and then kept on flash cards as they appear in the connected readings. They are best not used until the student is comfortable with the materials, and new sight words will thus not confuse the acquisition of phonics. Most students can benefit from this addition after a month or so of instruction.

Cloze Exercises- These are exercises in which a whole word is left out of a sentence, or a letter, or a syllable is left out of a word. To insert the proper word, syllable, or letter can call upon visual discrimination skill, auditory discrimination skill, phonic knowledge, spelling rules, vocabulary, and of course comprehension. RFS particularly, includes useful cloze exercises in its workbooks; however, RFS instruction can be enriched by exercises fine-tuned to individual students. Cloze exercises are easy and actually fun for the teacher to create.

Outside Work- Once a student is comfortable with the program, outside reading and writing may be encouraged. Ask students to spend five to 15 minutes a day reading anything that interests them from street signs and cereal boxes, to magazines and books. Ask in class about what they have read, which may be anything from an individual word to a newspaper article. This can be followed by requests that they write one sentence each night about what they have read, or about anything at all. The keeping of a journal becomes a natural outgrowth of this activity.

Carefully designed materials that directly support the curriculum are excellent, but they require planning. Examples: Vowels, dipthongs and consonant blends pronounced on tape by the teacher may be given to the student to listen to as he drives along in his car.

Connected readings may also be taped after they are written so that the student can listen as he reads and be sure his pronunciation is correct. Cloze exercises may accompany these tapes as long as they made directly from the words of the connected reading.

Handwriting practice for the beginning writer is an excellent outside activity, since most of the students have little writing activity in daily life...they have wisely avoided it! It may even involve the copying of the student's own words written down for her by the teacher.

Spelling- For so many of our students the heart's cry is.."Fix my spelling and I can show the world that I am o.k.." We cannot "fix" the spelling for most students, but we can provide them with a strategy for having it under their control. This means two things: 1. confidence in THEIR ability to produce words, sentences, and whole paragraphs that are correctly spelled, 2. acceptance that they may sometimes need help in this process, and that seeking help is a mark of strength. (One PR student who has written several plays, claimed his next will be titled, "I Can't Spell 'Twelve' Today".)

Spelling is the reverse of reading and of course should be taught hand-in-hand with it. For the LD adult, spelling sense is largely missing. Spelling progress usually lags behind reading progress. In fact, as suggested earlier, peculiar spelling patterns in a somewhat proficient, or marginal, reader are often a clue to some underlying difficulty with the phonology of the language. Students should be taught to use, as much as the language allows it, the phonic patterns when spelling. To this should be added a thorough grounding in rules of English spelling, and techniques of memory and association for sight word spelling. This base will reliably provide enough clues so that dictionaries and/or pocket spelling computers may be successfully used by the student. No matter how good they get in the controlled situation of a class, most students still have varying degrees of difficulty in "real world" spelling, especially if under pressure. A year or two is little time for the practice and use needed to perfect spelling. Again, for many it will always be an area of difficulty. PR staff found that when advanced PR students who had done well with spelling in most situations, were writing an essay, the spelling deteriorated. Students and teachers together considered that the creative process was antithetical to the analytic process of spelling. "You either have it memorized without having to think about it, or you don't." However, the same students were very able to take the finished copy, use the strategies described above, and perfect their own writing. It was not always a quick process, but it worked. The realization that one could control the outcome eased the degree of spelling anxiety for most students.

TEACHING STRUCTURE

Class Size- As stated these curricula may be taught effectively in several settings. Our advise is the smaller the grouping the better, because learning disabled adults need a great deal of individual attention. Our preferred method is to teach students in pairs that are closely matched for initial reading level. This allows enough time for individual work, while also enabling the benefits of a relationship with another adult who has, "walked in your shoes". These benefits range from the sharing of repressed pain, increased patience and motivation and thus learning, and the emergence of humor.

Time in Class- For the learning disabled reader frequent, short lessons are absolutely necessary for meaningful progress. Ideally students would have at least an hour to an hour and a half lesson every day for four or five days a week. This schedule supports the structure for presenting material in small units. It also helps prevent forgetting that is more likely to occur if lessons are overloaded with material and too widely spaced. For the lower level reader the shorter time is better initially. As skill and comprehension develop, lesson time can be extended productively. RFS materials presented in this schedule may be covered by the learning disabled adult in from eight months to approximately two years. None of the material should be skipped, but it may surely be truncated for the more advanced individual.

Because of the woeful underfunding of adult education, especially as it attempts to reach out to the learning disabled, the above issues of class time and size are difficult. Most programs cannot meet the ideal. If one has to compromise on the ideal we recommend larger class sizes, rather than less time for any individual. The necessary one-on-one phonics instruction can be done with aides or volunteers if they are properly trained and supervised. The RFS author is publishing a manual designed to instruct non-professional tutors in the teaching of RFS, When Right Is Wrong.

Staff- Any teacher or aide who will be working with learning disabled adults must have patience to inspire patience in adults who though they may be voluntarily in the classroom, have little belief in their own ability to succeed. Indeed, success with its added responsibilities, may cause them anxiety. Thorough study of the curricula and adequate planning for its use in the setting of one's own educational program is essential.

Team teaching is recommended for LD students. This structure enables the teachers to learn from each other's experiences and insights. The student reaps the benefit of these insights as well as the benefit of exposure to the individual strengths of two teachers. Weekly staff meetings to discuss individual students and instructional or personal concerns of the staff are necessary to sustain momentum for the hard, but wonderfully rewarding work of teaching learning disabled adults.

Physical Setting- A room that ensures a minimum of distracting noise or movement, that provides privacy and proper lighting are requirements. Fluorescent lighting should be avoided. For some students colored transparent overlays will ease the reading effort in a purely physical way. Sensitivity to certain wave lengths of light is a problem for some readers whether or not they are learning disabled. See page 10 for a description of this possibility.

Transition Class- For students who have completed or are near completion of the program, but want to practice and extend their skills, a small class of five or six students which features reading, writing and discussion activities, provides an intermediate step between the one-on-one, intensive reading instruction and the larger classes of an ABE center or college class. It can additionally provide a transition to the confident use of their skills in the worlds of work and community. Materials and activities should be built around students' interests and may include anything from writing job applications to group play reading.

SUPPORT RECOMMENDATIONS

There will be many opportunities for counselors and teachers to offer support to reading disabled adults who enter a reading program...from empathetic listening in the first interview to practical assistance as they take steps toward new goals after the program is completed; from educating students about their disability to helping them express long held bitterness; from preparing them and their families for changes in their lives to just "being there" as a support when a life crisis occurs. However, time will need to be allocated and opportunity made, in order to provide these support services. We recommend that support services be an integral part of any reading program for LD adults.

Emotional support for academic work will be taking place constantly in the classroom. It is hoped that teachers will also be comfortable with occasionally taking time from the language instruction to listen to and give emotional support for personal issues when the students need it. This is not to say that the focus of the teacher should be that of counseling or that the students should be allowed to avoid classwork through talk. But there will be times when the teacher can help best by allowing students to use some of their one-on-one time with the teacher to vent their feelings or share a problem. And, if the students are sharing really meaningful experiences with each other, that too should be allowed to continue. Students and teacher make up a mini support group, and there will be times when it can function as such.

A full support group, teacher or counselor led and meeting regularly, can be a most helpful adjunct to a reading program for adults, and we recommend it. Being with ordinary, nice, intelligent people like themselves, who have the same kinds of problems, and have had the same kinds of school experiences can be a tremendously healing experience, greatly aiding their self-acceptance. It can be a vehicle for venting stored-up feelings, and for gaining insights, for learning assertiveness, for getting support to continue if discouraged, and for receiving information not only about LD, but about a variety of related subjects. Students also gain experience communicating orally, and the social experience of being in a group. Many LD adults have avoided both. In a support group, their weaknesses are accepted...as one of our students said in describing how much the group had meant to her, "Nobody is going to laugh at you. Here, everyone is equal". The heavy burden of shame begins to evaporate and the disability becomes more emotionally neutral. Group meetings should, at times, be expanded to include spouse, and/or family...particularly if the focus is social, or informational. The family which is thus included in the student's program will feel a part of it and be more likely to be supportive.

In the absence of a support group, a counselor meeting regularly with the students can help them deal with some of the same issues. Whether or not there is a support group or regular counseling available to students, there will be times when the services of a counselor would be extremely helpful. There will be individuals who go through crises...a health crisis, a family or personal crisis, or an emotional crisis...during the time they are in a reading program. The teacher should have someone available to whom to refer the student...a counselor who will help the student deal with the crisis and/or refer the student if indicated, for in-depth, specialized or long-term help. In the absence of a counselor, the teacher will have to do this and should know enough about community resources to be able to take on the referring function.

Reading remediation stirs up old memories of long painful years in school. One of our students described it as "twelve years in a concentration camp". A few of the students could benefit from psychotherapy to help deal with the emotional scars resulting from reading failure in childhood...if they wish to, and when they are ready. A few may need it to help them through a crisis period. If, early on, the topic of counseling is mentioned casually as an option which some people choose, to help resolve difficulties, then they will know it is an appropriate subject to bring up later. If help is requested, referrals will need to be made. A team approach is ideal, but it may be impossible. At a minimum, during the process of referral or soon after, we recommend that the teacher or counselor makes sure that the psychotherapist knows about the common emotional effects of having a learning disability, in order to be able to distinguish them from emotional problems arising from other sources, or other kinds of personality problems.

The over all goal of an adult reading program should be that of empowering the whole person. To assist in accomplishing this, the legitimate concern of counseling and support can be any area of life in which students need help.

CLOSING STATEMENT

From an address by Marzialo Francis Carlopoli

The only way I can explain what life is like after learning how to read, is by comparing it to when I couldn't read. The one thing I can say up front, is the main difference is attitude...When I was asked to speak here today about what life is like after learning how to read, I thought to myself, this is going to be a snap. My life has changed tremendously since learning how to read, or so I thought. But when I sat down to write some notes, I found that my life hasn't changed so much, but my attitude toward life has changed tremendously...What I mean to say is, I had a job before learning how to read, I had bills that needed to be paid, I had to bring up my children just like any reader would and now being a reader myself I still have these things to do but now they don't seem to take as much effort. They're not so cold and burdensome. Now they are challenging and fun. FUN, a word that I never associated with life before learning how to read. Things were fun, but life wasn't and that's Attitude. Let me give you a small example of what I'm trying to say. Before learning to read, if there was a job I wanted, I might go and apply for it, and if I did, when sitting in the interviewer's office, after I had taken the employment application and snuck down the street where I would wip out my trusty little cheat sheet, so I could fill out the application "in the privacy of my "shame" cloaked in the disguise of I have something to do, so I'll just take the application now and bring it back later, filled out of course! And now sitting in the office, waiting for the show to start. Thinking, am I a good enough actor to sell this person a defective bill of goods, and can I really do the job if I get it...The key words here are, might, cheat sheet, disguise, and the big one, the most important one to non-readers, SHAME! Shame the one single word that covers all your feelings, and one's attitude. No matter how good of a worker you may really be, no matter how many people tell you your worth, you just can't fully believe them, or yourself. Your attitude toward everything is distorted. Now being a reader, in the same situation of an interview, I still have to sell myself, but now I am selling a product that is fully operational, a product that is worth the investment to the employer. Not just because I can read and write "spell" but because of the attitude that grows out of being able to read and write...Learning how to read isn't the magic pill that changes your life over night...it is the magic pill that let's you stand...just tall enough to be eye to eye with others...It gives you a choice that you never had before...

The only thing that I can say to a non-reader who wonders if the effort to learn is worth it, is...there is no pot of gold at the end of the rainbow, but there is a rainbow. And to those of you who wonder if teaching the learning disabled is worth it? I, as an example, say yes and thank you.

This presentation was made at a literacy conference co-sponsored by the Literacy Coalition of Western Massachusetts.

APPENDIX A ASSESSMENT BIBLIOGRAPHY

General Screening Tools for Adult Learning Disability

Assessment - Remediation of Adults with Learning Disabilities
A Five Part Resource Series for Adult Basic Education
Teachers - includes examples of informal assessment
Five County Adult Education Program
500 College Avenue, Athens, Georgia, 30610-1299

The London Procedure: Adult Learning Problems - A screening,
diagnostic, and teaching guide
Instructional Material Laboratory
Ohio State University, (614)422-5001

READING

Gilmore Oral Reading Tests
The Psychological Corporation
Harcourt Brace Jovanovich Inc.

Gray Oral Reading Tests-Revised
The Psychological Corporation

Informal Reading Inventories:
Burns and Roe - Houghton Mifflin Co.
Basal Readers - many of these also publish IRIs

Wide Range Achievement Test -Subtest Word Recognition
The Psychological Corporation

Slosson Oral Reading Test -Word Recognition/Graded Lists
Slosson Educational Publications
P.O. Box 280, East Aurora, NY 14502

Woodcock Reading Mastery Tests -Subtest: Word Attack/Phonics
Teaching Resources, Hingham, MA

Botel Reading Inventory -Word recognition - Phonics
Follett Publishing Co.

Stanford Diagnostic Reading Test -Silent Reading
Harcourt Brace Jovanovich, Inc.

Test of Adult Basic Education -Subtest Silent Reading
McGraw-Hill

Jamestown Press Timed Reading Tests-Graded Passages, Timed
Jamestown Press Jamestown, Rhode Island

Listening Comprehension

Diagnostic Reading Scale
McGraw Hill

Stanford Achievement Tests -Listening Comprehension Test
Harcourt Brace Jovanovich

Brown Carlson Listening Comprehension Test
Harcourt Brace Jovanovich

(Any number of reading tests may be used for listening comprehension, as may IRIs)

Written Language

Wide Range Achievement -Subtest Spelling
The Psychological Corporation

Larsen-Hammill Test of Written Spelling
Pro-Ed

Woodcock-Johnson Psycho-Educational Battery, Part II
Teaching Resources -Spelling, Punctuation

Test of Written Language- TOWL -Vocabulary, thematic
Pro-ED maturity, thought, style

Oral Language

Peabody Picture Vocabulary Test -Receptive Language
American Guidance Service, Inc.

Woodcock Language Proficiency Battery -Oral Language Cluster
Teaching Resources

Illinois Test of Psycholinguistic Ability -Verbal Expression
University of Illinois Press, Urbana, ILL.

Boston Naming Test

Cognition and Perception

Detroit Tests of Learning Aptitude -Selected Subtests
Pro-Ed Visual and auditory memory

Woodcock-Johnson Psycho-Educational battery, Part I
Teaching Resources

Wepman Auditory Discrimination Test
Publishers Test Service, Monterey, CA 93940

Bender Visual-Motor Gestalt Design Cards
Psychological Assessment Resources, Inc.

APPENDIX B CURRICULUM BIBLIOGRAPHY/DESCRIPTIONS

Reading From Scratch, Dorothy van den Honert, Educators Publishing Service, Inc. (EPS), 75 Moulton, Cambridge, MA 02238

When Right Is Wrong, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158.
Teaching the dyslexic child or adult, Dorothy van den Honert (WRW is a book which enables any friendly easy-going adult with normal language skills to teach a dyslexic person to read. With RFS it forms a complete, exhaustively detailed guide for the non-professional tutor).

Let's Read, Leonard Bloomfield, Clarence Barnhart, Inc., P.O. Box 250, Bronxville, NY 10017 or EPS

Basic Literacy Kit for Adults, Sylvia Greene, Massachusetts Board of Library Commissioners, 648 Beacon St., Boston, MA 02215.
(Designed to be used by volunteer tutors as well as teachers, this program is a structured, sequential phonics, sight word, rule based reading and writing curriculum. Connected reading passages and discussions are built around adult interests, and are in the form of a basal reader. It also includes a guide of specific supplemental materials that may be used with the kit). These materials are especially designed for 0-3 grade level.

Wilson Reading Program, Barbara Wilson, Educomp, 4 B Evergreen Lane, Hopedale, MA 01747
(The system is a comprehensive reading and spelling program that uses a structured, phonetic, multisensory approach to language. It stresses the understanding/use of syllabication strategies. Sentences and stories were created with adult themes in mind. Materials include 12 reading books to correspond to the phonetic and syllabication structures that are presented).

Starting Over, Joan Knight, EPS
(Designed for adults, this program is a combined teaching manual and student textbook for reading, writing, spelling vocabulary and handwriting).

Step By Step, Lee-Ann Sanborn and Georgene Fudali, Learning Disabilities Association, Inc., 2104 Park Ave., Minneapolis
(This multisensory structured, sequential phonics curriculum is designed for use by volunteer tutors. The teacher manual, reading book, spelling book, and workbook give detailed instructions in concepts and methods, materials and supplementary activities).

Remedial Training for Children with Specific Disability in Reading Spelling and Penmanship, Anna Gillingham and Bessie Stillman, EPS

Orton Gillingham Materials Department, EPS
(This section of EPS can provide a list of O.G. oriented materials).

Specific Skills, Barnell Loft, 958 Church St., Baldwin, NY
(These are a series of books providing graded passages focusing on varying aspects of comprehension: main idea, inference, drawing conclusions, etc.).

Beginning Reasoning and Reading, EPS

Reasoning and Reading, EPS
(These materials are designed to develop the basic language and thinking skills that build the foundation for good reading comprehension. The work can be done independently in groups, and lends itself to oral discussion).

Solving Language Difficulties, Steere, Peck, Kahn, EPS
(This is an excellent resource for teacher and student. It categorizes many of the irregular forms in English spelling, as well as providing information about the language based on Greek and Latin roots and sound patterns).

SPELLING

Building Language Skills, Basic Spelling, Book B, Book C. L. Helson & A. Fiske, EPS

Spellbound, E.T. Rak, EPS

The Spell of Words, E.T. Rak, EPS

Systematic Spelling, M.R. Williams, EPS

Teaching Written Expression: The Phelps Sentence Guide Program, Academic Therapy Publications, Novato, CA

Handbook of English series, Spelling, Punctuation, Grammar, Composition, Comprehension, J.R. Orgel, EPS

APPENDIX C RESOURCE ORGANIZATIONS

National

The Association for Children and Adults with Learning Disabilities (ACLD)
4156 Library Road, Pittsburgh, PA 15234 (412) 341-1515
An international organization of parents, of LD adults, and of professionals concerned with LD. State and local branches. Disseminates information through its publications, and an annual conference.

The Association on Handicapped Student Service Programs in Postsecondary Education (AHSSPPE)
P.O. Box 21192, Columbus, OH (614) 488-4972
Information about postsecondary education opportunities. Support for disabled students on campus.

HEATH Resource Center, The National Clearinghouse on Postsecondary Education for Handicapped Individuals
One Dupont Circle, Suite 670, Washington, DC 20036
1-800-54-HEATH
Information about services, polices, facilities in colleges, vocational-technical schools, adult education programs of interest to handicapped. Resource directory, fact sheets.

Literacy Volunteers of America, Inc.
5795 Widewaters Parkway, Syracuse, NY 13214-1846 (315) 445-8000
A national organization with state and local branches which recruits and trains volunteer tutors and matches them with adult students of limited literacy.

National Library Service for the Blind and Physically Handicapped, The Library of Congress (NLS)
1291 Taylor Street, N.W. Washington, DC 20542
(202) 882-5500
Talking Books Program. Wide range of taped materials are distributed to eligible individuals through regional libraries, at no charge.

National Network of Learning Disabled Adults (NNLDA)
P.O. Box 716, Bryn Mawr, PA 19010 (215) 275-7211
Maintains list of self-help groups of LD adults.
Newsletter. Annual convention.

Orton Dyslexia Society, Inc.
724 York Road, Baltimore, MD 21204 (301) 296-0232
An international organization with local branches. Publishes journal, newsletters, and numerous pamphlets on all aspects of dyslexia. State and national conferences.

Recording for the Blind, Inc.
20 Roszel Road, Princeton, NJ 08540 (609) 452-0606
Provides recorded educational materials to print handicapped individuals at no charge. Eligibility requirement.

Massachusetts Organizations

The Commonwealth Literacy Corps
100 Nashua Street, Room 946, Boston, MA 02114 (617) 727-5717
Works with local programs, state-wide, to develop their capacity to provide tutoring services for adults by recruiting, training, and matching tutors with adult students.

Disabilities Law Center of Massachusetts, Inc.
11 Beacon Street, Suite 925, Boston 02108 (617) 723-8455
1-800-872-9992 or
22 Green Street, Northampton, 01061 (413) 585-6024
1-800-222-5619

Information Center for Individuals with Disabilities
20 Park Plaza, Room 330, Boston 02116 1-800-462-5015

The Learning Disabilities Network
25 Accord Park Drive, Rockland 02370, (617) 740-2327
Information, referral for educational therapy. Newsletters, conferences.

Literacy Volunteers of Massachusetts, Inc.
P.O. Box 102 Prudential Station, Boston, MA 02199-0102 (617) 536-7171
State-wide program providing tutoring in basic reading, and technical assistance and support to local LVM programs.

Massachusetts Association for Children and Adults with Learning Disabilities (MACLD)
P.O. Box 28, West Newton, 02165 (617) 819-5009

Massachusetts Association of Learning Disabled Adults
P.O. Box 1628, Brookline, 02146 (617) 588-4130
A support group.

Massachusetts Coalition for Adult Literacy
P.O. Box 547, Boston, MA 02102 Toll-free 1-800-447-8844
A central office which maintains a toll-free hot line for referral to literacy organizations across the state, publishes a directory of literacy organizations, and has public awareness projects.

New England Branch of the Orton Dyslexia Society
P.O. Box 353, Lincoln, 01773

Appendix D

Intake Interview

NAME DATE
ADDRESS
PHONE

I. The Reading Problem:

Estimate of Reading Level: What is read?
How much?

Motivation: Why now?

Formal schooling: Where?

When and how it ended?

When did you realize you weren't learning the way others around you seemed to be?

When was reading problem identified? by school or by parents?

What were you told?

What happened as a result? Spec. Ed., tutoring? What was it like for you? How did your family deal with it?

Learning strengths: In school? On your own?

Other education, training, driver's license-how did you get it?

Interests, Hobbies, Activities?

Jobs you've had:

Future hopes and goals

II. Language/Learning Problems in Family: (explain)

Parents, Grandparents, other relatives:

Brothers/sisters:

Children:

Educational attainment: Parents: Siblings:

III. Personal Data

Married:
Does the person you live with know your situation? If "no" how to notify you?

Employer:
Job:
Hours:
When available for class:
Does employer know of your situation? If "no" how to notify you?

Health:
Any problems?

Handedness:

Allergies:

Premature gray hair (before 25 yr. old)

Colitis:

Head injuries, birth trauma, childhood fever:

Last eye exam:

Headaches, burning eyes from reading?
How soon after you start?

Fall asleep when reading? (other than reading in bed)

Words move, jump, run off page-how soon?

Words get blurry, fuzzy-how soon?

Is lighting a problem? Fluorescent lights, bright lights?

IV. Commitment Made; Testing explained and Scheduled:

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